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BRANCH OFFICES

GLASGOW: 87, Union Street . . . . . Central 4646

NEWCASTLE-ON-TYNE: 21, Mosley Street . . . Newcastle-on-Tyne 22239

MANCHESTER: Century House, St. Peter's Square . . . Central 3101

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## British Transport Administration

**P**RELIMINARY details of the interim organisation which will come into effect on October 1 were made known by the British Transport Commission on Wednesday last. A summary of the arrangements is given on page 345. Two points must be made at this stage: in the first place, it is an interim plan to cover the transitional period between the abolition of the Executives and the reconstitution of the Commission and the completion of the full scheme of railway re-organisation which the Transport Act, 1953, requires to be submitted to the Minister and Parliament in not less than 12 months. Secondly, it consists of an interim organisation for railways and a new set-up for docks and inland waterways and for hotels and catering, in relation to the Commission. Greater status and powers are to be accorded to the Chief Regional Officers who will become Chief Regional Managers, be responsible for commercial, operating and technical activities, and will report directly to the Commission. The latter will have an expert headquarters staff and will have the primary function of controlling major policy and general direction, settling inter-Regional questions, and conducting certain common and central services. The Commission also becomes the employer of all officers and staff of British Railways. Certain changes are also made in the arrangements for

managing docks and catering. In the absence of further details of how the organisation is to be operated, it is impossible to comment on it at length, but no doubt the establishment and personnel of the organisation will shortly be known, together with the changes in appointments which are inevitable. A better opportunity will then be afforded to assessing the merits of the new plan.

## Six Years' Progress by London Transport

**H**IS retirement next week from the Chairmanship of the London Transport Executive adds significance to the last of Lord Latham's annual personal letters to his staff, published earlier this week. Reviewing outstanding events on London Transport since he took office in 1948, he points to notable improvements on the Underground, such as the 214 new coaches acquired for the District and Metropolitan lines and the 104 for the tubes, the running of trains with greater capacity in peak hours, and the completion of the Central Line extensions to Epping and West Ruislip. As the Government has imposed a limit on the amount of capital expenditure to be undertaken, London Transport has had to ensure that its allocation has been used in a way best calculated to improve services as a whole. Lord Latham laments the successive increases in fares which London Transport has had to seek but explains that, though much has been done in five years to reduce costs, the large gap between increased costs and increased fares is still too wide to be bridged by greater efficiency and economy. In thanking all members of the staff for their loyal support to him and his colleagues, he exhorts them to continue their efforts to keep down costs and increase receipts.

## Crewe Pupils and Premiums

**A**FTER a lapse since 1939 the series of dinners, which previously, with the exception of 1926 had been held annually, of Past and Present Crewe Pupils and Premiums, was resumed at Crewe on Monday last. Mr. R. A. Riddles, Member of the Railway Executive, presided. The resumption of these dinners was obviously popular and there is every probability that from now onwards they will be resumed on annual basis. Last Monday there were present 58 Crewe men and 21 guests. A number of past Pupils and Premiums had expressed their regret at being unable to attend because of the difficulty of attending the function at Crewe. On Monday last, Lord Glyn of Farnborough was the guest of honour and he proposed the toast of Past and Present Crewe Pupils and Premiums, which was responded to on behalf of past Crewe men by Captain Reginald Terrell and on behalf of present Crewe men by Mr. H. J. Grant. Mr. Riddles proposed the health of the guests, to which Mr. J. W. Watkins, Chief Regional Officer of the L.M.R., responded. The toast to the Chairman was proposed by Mr. John Shearman, and Mr. R. E. Trevithick thanked Mr. Eric A. Robinson for the hard but successful work he had undertaken as Secretary.

## Machine Tools

**F**OR the first time since this country's rearmament effort began in earnest before the last war, the British machine tool industry is being faced with serious commercial competition. With the near completion of the present phase of rearmament, defence contracts are estimated to be absorbing only 10-15 per cent of the industry's productive capacity. Home and overseas orders are not forthcoming as in the halcyon days of immediate postwar development and subsequent demand, when Britain, with two or three other sources, was in an advantageous position whilst seeking to satisfy overwhelming demands from many countries. The present flow of incoming orders is reported to be nearly 30 per cent below productive capacity. Most firms welcome the new era of competition; some are even increasing staff in order to better their chances; delivery dates are improving; and while it is hoped that Britain's good name in the machine tool industry will enhance her position in competition for overseas orders, the position nevertheless presents an

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opportunity for industry at home to restock its own resources. This cannot fail to improve the position of the industries supplying material to railways at home and overseas. Deliveries should be considerably improved, a very important factor in the export of rolling stock and other railway equipment.

### Increase in East African Rates Foreshadowed

**T**HE Transport Advisory Council of the East Africa High Commission foresees that an increase in railway rates will be necessary to meet the higher costs resulting from rises in wages and prices and the heavy increases in capital and depreciation costs derived from the large-scale development programme of the East African Railways & Harbours. Delays in the delivery of locomotives and rolling stock on order from abroad, it is stated, and the difficulties caused by the political emergency in Kenya are depriving the railways of the additional revenue which at any other time they might expect to gain. Although in view of the present abnormal conditions the council recommends that the introduction of increased rates be deferred, and any deficit be charged to the rates stabilisation fund, it adds that such deferment will be at the expense of sacrificing capital improvements from revenue. It points to the possibility of a deficit this year and adds that by 1956 the deficit will be £1,500,000 unless rates rise substantially or traffic increases beyond expectations.

### Germanium Rectifier Development

**T**O many it will seem premature to discuss the use of germanium as a rectifying material for industrial purposes, but the suggestion has been made in the journal of the Société Française des Electriciens that a contact area of 15½ sq. in. in a germanium rectifier might in the future pass sufficient current to drive a 4,000 h.p. locomotive. At present germanium is used mainly for rectifying in radio circuits, but a unit for handling 50 mA. is in production and laboratory rectifiers have been made that will pass currents up to 400 mA. The French forecast, recently quoted by Monsieur Louis Armand, General Manager of the French National Railways, refers to single rectifier elements and not to overall size. It is based on the low forward and high back resistance of germanium compared with selenium and other materials, and while the use of germanium for traction currents may seem a somewhat long-term forecast, the suggestion brings other possible locomotive applications to mind. It is often the practice in a.c. locomotives, for example, to use rectifiers for supplying d.c. for charging the battery which feeds lighting and control circuits and other services. For such applications all methods which combine compactness with increased efficiency are of interest.

### Railway Convalescent Homes

**F**EW pleasanter and more practical ways of signifying the interest in the railway convalescent home movement of those responsible for the management of British Railways and the London Underground could be found than the attendance of senior railway and other transport officers at the reopening last Friday of the home at Ilkley. A short account of the ceremony is given elsewhere in this issue. Not only were Sir John Benstead, President of the Railway Convalescent Homes, and his elected successor, Mr. W. P. Allen, present, both being intimately connected with the movement, and officers of the British Transport Commission, and Railway and London Transport Executives concerned with staff matters, but another Member of the Railway Executive, General Sir Daril G. Watson, and two Chief Regional Officers of British Railways, found time to travel to Ilkley. In the era of the welfare State, the railway convalescent home movement is an embodiment of the principles of thrift and self-help. From small beginnings, it has grown rapidly in half a century, so that the subscriptions from 450,000 British Railways and London Underground employees today enable ten homes to be maintained in the healthiest and most beautiful parts

of Britain, together affording in a year to several thousand men and women the means of recuperation in pleasant surroundings from sickness or injury.

### Doncaster Works Centenary

**T**HE directors of the Great Northern Railway selected Doncaster in 1851 as the site of their works because of its proximity to large coalfields and ironfounding centres and of good water communications. From the end of 1853, by which time 950 men were employed, largely transferred from the old G.N.R. repair works at Boston, to the present day, when the number employed is some 5,000, the works have steadily expanded. Their products include world-famous locomotives of the G.N.R. and L.N.E.R. and rolling stock for such well-known trains as the "Flying Scotsman," whilst the names of four locomotive engineers who reigned there, Sturrock, Patrick Stirling, Ivatt, and Gresley are forever associated with the works. In Great Northern days, however, Doncaster built for the G.N.R., and even after grouping the works staff could transfer their loyalties to the L.N.E.R. without any serious breach in the continuity of tradition of serving one organisation. Since nationalisation the situation has radically changed: Doncaster is only one of several plants inherited from the main-line companies and co-ordinated in their functions to serve British Railways as a whole. As Mr. R. A. Riddles, retiring Member of the Railway Executive for mechanical matters, remarked at the centenary celebrations last week, it says much for the loyalty and adaptability of Doncaster men that in the past six years they have shared their ideas, talents, and experience with colleagues in the Railway Executive and other Regions of British Railways.

### Diesel-Electric Operation in South Australia

**B**Y last June the South Australian Railways had ten heavy-duty main line diesel-electric locomotives in operation. They have power equipment by the English Electric Co. Ltd., and bogie frames by Bradford, Kendall, Limited, of New South Wales. The locomotives were assembled by the S.A.R. Since going into service in September, 1951, the first, named *Lady Norrie*, has covered 187,000 miles, an average of 9,850 miles a month, between Adelaide and the Victorian border at Serviceton. Used in pairs, the diesels have been hauling loads of 700 tons over the heavy gradients through the Adelaide Hills, compared with the 540-ton loads handled by steam locomotives. They have now taken over the working of the "Overland" the inter-State Adelaide - Melbourne express, after over 60 years of steam haulage. The fast inter-state goods service between those capitals is also diesel hauled; goods accepted up to 3 p.m. at Mile End Yards, Adelaide, now reach Melbourne on time regularly at 2 p.m. the following day. After the journey through the Adelaide Hills, trains are marshalled in the Tailum Bend Yards and loads of 1,300 tons leave daily for Melbourne.

### Dieselising a 7,800-mile Railway

**T**HE biggest American railway as yet to approach complete dieselisation is the Southern. Sixteen road-shunting units now on order will bring the total number of units owned by this railway to 880, with a total horsepower of 1,240,250, and these will be sufficient to monopolise the entire working of this 7,793-mile system, extending from Washington and Cincinnati to New Orleans, and by far the biggest American railway to date to make the complete changeover from steam to diesel power. The effect of dieselisation on Southern operation has been remarkable. In the 11 years from 1941 to 1952 inclusive, in freight service the average gross ton-miles per train-hour over Southern metals have increased from 25,790 to 47,378, while the average number of locomotives in service per month has dropped from 787 steam to 257 diesel (501 units); in passenger service the average number of coaches per train-mile has grown from 8.15 to 10.57, while the locomotives in use have diminished in number from an average of 299 steam to 68 diesel (107 units).

### Premature Release of Crossing Gates

THE accident at Plessey Road crossing, Newsham, on April 4, 1953, arose, as will be seen from Colonel D. McMullen's report, summarised in this issue, from the signalman, about  $\frac{1}{4}$  mile away, failing to advise the gatekeeper of one of the trains. After the first one, receding from him, passed the gates he released them, thinking the other one brought forward from the outer home, to have reached the crossing. The distance between it and the signal was greater than he appreciated. The gates were in consequence opened just in front of the unannounced train. There was said to be black smoke about, but Colonel McMullen thought the gatekeeper could not have observed the line as carefully as he asserted, or he would have seen the lights of the train. He is not prepared to recommend additional equipment at this place, where no previous accident has been recorded, but thinks it of advantage to mark important distances on signalbox diagrams. This is being done today much more than at one time, but it is of interest to note that the former London & South Western Railway was indicating distances between signals, points, gates, and so on, on its diagrams certainly 50 years ago, and showing the complete mechanical and electrical locking also. This was found very helpful to relief men.

### Economical Key Locking in India

AN increase of traffic on a portion of the former Eastern Punjab Railway—now part of the Northern Railway of India—where the single-line stations were not interlocked, made it necessary to look for some inexpensive way of getting a reasonable degree of protection and assurance of the correct working of home and outer signals. It was considered essential to give the stationmaster direct control over them and, of course, interlocking with the facing points had to be provided. An article in the *Quarterly Technical Bulletin* by Mr. L. C. Mohindra of the Central Standards Office, describes the key interlocking apparatus which has been applied for the purpose and has proved very effective. A hand-worked f.p. plunger is operated by a pointsman, after setting the points in accordance with the main or loop key sent to him by the stationmaster; and another key, then released, allows the home signal to be pulled off from the station. This in turn allows the pointsman to clear the outer signal from where he stands. Discordance between the two signals is prevented by a "detacher" on the home post. The cost is only a fifth of what Standard 1 signalling would entail, and one fifteenth of that required for Standard 3 cabin interlocking.

### The British Transport Commission

THE Minister of Transport last week-end announced the names of two full-time and one part-time appointments to the British Transport Commission, all three as from October 1. The full-time Members are Mr. J. C. L. Train and Sir Reginald Wilson, who are to be paid £5,000 a year for their services. The part-time Member is Sir Harry Methven, who at his own request will be unpaid. The membership of the Commission, as it is now known, is therefore: General Sir Brian Robertson (Chairman), Sir John Benstead (Deputy-Chairman), Lord Rusholme, Mr. F. A. Pope, Mr. Train, and Sir Reginald Wilson (all full-time) and Sir Harry Methven. The remaining original part-time Members are Mr. H. P. Barker, Captain Sir Ian Bolton, and Mr. John Ryan.

Of the new Members Mr. Train joins the Commission from the Railway Executive, where he was the Member responsible for civil engineering matters. He was formerly Chief Engineer of the L.N.E.R., and became a Member of the Railway Executive on its inception in 1947. He may be described as a philosopher-railway-engineer, but his philosophy is by no means academic and is based on his long experience of railways and of life. His three main ingredients for success are: (1) technical ability in whatever capacity one is employed, (2) common sense (in which he

includes personality or character), and (3) luck. As to technical ability, Mr. Train holds that this is acquired by study and hard work and is a self-evident tangible thing. As to common sense, he believes that more is to be gained by honesty and straightforwardness—that is, the direct and open approach in business dealings—than otherwise. As for luck, while Mr. Train holds that it plays a very important part, he points the moral that when a person gets into a post of authority it is desirable to see that luck is not allowed to play too exaggerated a part in the career for whom he is responsible.

Sir Reginald Wilson is Comptroller of the British Transport Commission, a position he has held since its formation. Previously he was Director of Finance of the Ministry of Transport, and, for a time, joint Financial Adviser to the Ministry. As one of the Chief Officers of the Commission (with responsibility for finance and statistics) he has wielded very considerable influence in the formation of Commission policy and has been a principal witness on behalf of the Commission at a number of inquiries.

Sir Harry Methven, at present Chairman of the Hotels Executive, is an industrialist whose interests are largely in hotel and catering companies. As a part-time Member of the Commission, his Chairmanship of the Hotels & Catering Services Committee will be invested with a special direct relationship to the Commission and should enable very close liaison to be maintained between the Committee and the railways using its catering services.

### New Chairman of the London Transport Executive

GR EAT changes are not unnaturally expected as a result of the liquidation of the Railway and its attendant Executives, and it is certain that changes of some magnitude will shortly become apparent in the transport industry of these islands. Whether the present reversal of policy of the previous few years will show the hoped-for results is a question in some debate, and it is obvious that the answer will not solely depend on the fact that British transport is in general in the hands of men who, in experience and ability, rank second to none. There is, on the other hand, much less reason to doubt that the London Transport Executive, under its new Chairman, Mr. John Elliot, the second and last Chairman of the Railway Executive, will reflect in increased efficiency his well-known drive and sound knowledge of suburban transport working and conditions.

Mr. Elliot brings to his new duties a wide railway experience—beginning his railway career on the personal staff of the late Sir Herbert Walker, the then General Manager of the Southern Railway, he graduated to the post of Deputy General Manager in 1939, and, in 1947, he became Acting General Manager of the Southern Railway. He was appointed Chief Regional Officer of the London Midland Region in 1950, and thus added specialised knowledge of freight handling to his already varied experience in passenger transport matters. From Euston, where he energetically implemented many important schemes which were in abeyance, Mr. Elliot went to Marylebone Road as Chairman of the Railway Executive. It is obvious that this wide range of responsibilities that he has in the past been called on to assume, qualifies him for a post of no mean order, and London Transport Executive's gain is a loss to British Railways. Mr. Elliot, in his new capacity, will retain his present wide powers of initiative, insofar as he will be responsible directly to the British Transport Commission and therefore will be in a position to impose his considerable personality on the Executive with the minimum of hindrance from outside.

Mr. Elliot has had wide experience of publicity matters—an important facet of the L.T.E. function. He does not fear the impingement of the new idea, but is always ready to consider a necessary change or himself to propose an innovation. He has the energy to carry developments through to their conclusions, and it is not difficult to fore-



see considerable increased activity in the working of the London Transport Executive which, in common with all large undertakings, however sound, will always be open to improvement.

In addition to his knowledge of railway conditions and practice, Mr. Elliot is conversant with problems of road transport. He has studied road and railway systems in the United States and Canada and also in Australia. He was invited by the Victorian Government in 1949 to investigate and advise on rail and road transport in that State—many of his recommendations were implemented and are now incorporated into Victorian Government Railways practice.

In this country he has been a Director of various bus companies associated with the railways in the South of England, and the practical experience he has gained on the administrative side is reflected equally in his knowledge of actual working conditions—knowledge gained, as always during his career, from contact with the workers themselves. Under the present system of departmental control, when "the official channel" so often entails frustration for both management and labour, the accessibility to the man on the job shown in the past by Mr. Elliot will be welcomed in his new sphere of authority.

Not the least of the assets Mr. Elliot will bring to bear on his new duties are his resilience in the face of difficulty and his unbounded optimism. These will be particularly valuable at the present stage of London Transport relations with the travelling public. Above all, the new Chairman is likely to become "a character" in the London Transport scene, a factor which has been missing since the days of Lord Ashfield.

### Economic Forms of Motive Power

**A** POSITION has long been reached in which steam, electric, or internal combustion traction can be relied on to meet a wide range of traffic conditions, and any decision on a change in the form of motive power in any given conditions cannot be based only on technical grounds. This is pointed out by Mr. R. C. Bond in his presidential address delivered last Wednesday to the Institution of Locomotive Engineers, which puts the case for each form of motive power clearly and impartially. Justification for a change must depend generally on the economics of the case, he considers, and the strength of this is affected so much by the natural and financial resources, the geography, and traffic conditions of each country. The relative advantages and disadvantages of steam, electric, and internal combustion locomotives have been argued incessantly for more than 30 years, and he suggests that the time has come to concentrate less upon argument, not always impartial, and more upon making the most effective and economic use of all forms of traction we have available.

In the future as in the past, he maintains, railways will occupy the predominant position in meeting national long-distance bulk transport of freight and passenger requirements. Their contribution to the nation's prosperity largely depends on the extent to which advantage is taken of all new technical developments. Possible new forms of motive power therefore are of great importance. Scientific development has proceeded so rapidly and over so wide a field during the first half of the present century that nobody can predict with any certainty what resources will be available in 20 years' time. Despite the abundance of fuel oil, it is hard to avoid the conclusion that in present and prospective economic conditions railway motive power should continue to be based mainly upon home produced fuel. Unless oil can be distilled from coal at competitive prices, coal as mined must continue to be the railway's main source of energy. It may be argued that the additional amount of oil which would have to be imported to run the railways of this country with diesel-powered units would be of no importance in relation to total consumption, but this argument is hardly convincing, he says, even supposing it were economically sound. The rising price of coal and increasing scarcity of higher grades must compel a far-reaching change in

the way fuel is used and encourage a trend toward electrification, which would be strengthened by the knowledge that the most practical way of utilising atomic energy for transport would probably be through conversion to electricity.

On electrification, Mr. Bond states that according to the Weir Report on main-line electrification, the limiting traffic density above which electric traction should be profitable is 3,000,000 trailing ton-miles per single track per year. From the report of the committee set up by the Railway and London Transport Executives under the chairmanship of the immediate Past-President of the Institution, Mr. C. M. Cock, it would appear that 4,500 route-miles, equal to 29·8 per cent of the lines not so far electrified, carry traffic above this critical density. The advantages of electric traction and its ability to meet the most arduous conditions have long been recognised. The relatively slow progress of main-line electrification between the wars is caused primarily by the uncertainty of an adequate return on the heavy capital outlay involved. The trend of costs during the years since the Weir Report was published has probably tended to lower the traffic density at which electrification would pay. The prospect has improved, he thinks, because of the greater emphasis now placed upon a higher standard of cleanliness and amenities in travel, which experience has shown to be obtainable with electric traction.

Careful distinction, however, should be made between what the community can afford to pay for a real increase in efficiency and economy in transportation on the one hand, and for desirable, though non-essential, improvements on the other. Since the war severe limitations on capital expenditure have curtailed, and still do, the possible rate of progress with electrification. Extensive schemes are under consideration, which, if authorised, would, even with the present restriction in investment expenditure, impose a heavy burden on the manufacturing capacity available to the home market. The technical staff of British Railways are actively engaged in the development of prototype electric locomotives and multiple-unit stock in preparation for the time when large numbers would be required. Some double bogie C-C locomotives, he points out, are under construction at Gorton, which should be suitable for services over wider areas other than the Manchester-Sheffield line on which they will first be engaged; and a new two-car multiple unit set is being built at Eastleigh, suitable for suburban electrification in many parts of the country.

As to the future prospects of internal combustion traction, he is not surprised that, with the remarkable developments in the U.S.A., there is adverse comment that more has not been made of this form of motive power for main-line services in Britain. Conditions, as is well known, are very different, and whether diesel or gas-turbine locomotives as distinct from railcars would establish a position of substantial importance for main-line services in Great Britain is a question not finally solved; technically they should meet all requirements. Internal combustion locomotives are handicapped on economic grounds, the higher cost of oil offsetting to some extent their high thermal efficiency, and fuel costs per unit of power at the drawbar show no greater advantage at present.

Repair costs may prove to be less than for steam locomotives, but would certainly be higher than for electric locomotives, and as the first cost of construction at present is from three to four times as much as for steam locomotives of similar power it would, Mr. Bond says, be hardly possible for internal combustion locomotives to show a net reduction in total costs except on main-line services where traffic conditions permit their high availability to be utilised, which would give some three or four times the annual mileage achieved by steam locomotives. The small number of main-line diesels at present in service averages 3,500 miles a week, equivalent to approximately 168,000 miles a year on express passenger services, but the number of engine workings which could be arranged to obtain these mileages is limited, and more mileages are needed to compensate for higher first costs.

Mr. Bond is of the opinion that, with the long-term pros-



pects of electrification and the steam locomotives now in service, the extent to which the use of large main-line internal combustion engines, diesels or gas-turbines would be financially profitable on British Railways is very limited. In direct contrast, diesel shunting locomotives with one man only on the footplate are firmly established as a most profitable investment, and British Railways have a five-year plan to extend their use. There would appear also to be encouraging possibilities of economy in the operation of many secondary services by multiple-unit diesel railcars with under-floor bus engines, and the orders recently placed for a substantial number of this stock are the first results of a most comprehensive reassessment made of their economic possibilities for branch line and fast interurban services.

### British Transport Commission Traffic Receipts

**I**NCREASED coal output during Period 9, the four weeks to September 6, is reflected in British Railways coal class traffic receipts, which are 11.1 per cent up on last year's figure. With allowance made for the 5 per cent rate increase during the past twelve months and for a tendency towards shorter hauls of coal from pits to ports instead of longer inland rail journeys, the increased receipts show that the increase in the originating tonnage of coal consigned by rail must have been considerable. The rise in the steel output is reflected rather less clearly in the 8.4 per cent increase over 1952 in mineral receipts for this period, again allowing for the 5 per cent rise in rates, though the high proportion of mineral traffic that is not steel, but only the raw materials for its production, must be borne in mind.

Railway merchandise traffic receipts were slightly below the corresponding figure for last year, which in view of the rate increase means a slight reduction in originating tonnage compared with 1952, which is in accordance with the general trend. A substantial increase over Period 8 is explained by the incidence of the August bank holiday. C. & D. receipts were very little up on the 1952 figure, but this is unlikely to make any appreciable difference to the results from this unprofitable service.

|   | Four weeks to<br>September 6 |               | Incr. or<br>decr. | Aggregate for<br>36 weeks |                | Incr. or<br>decr. |
|---|------------------------------|---------------|-------------------|---------------------------|----------------|-------------------|
|   | 1953                         | 1952          |                   | 1953                      | 1952           |                   |
| <b>British Railways—</b>  | £000                         | £000          |                   | £000                      | £000           |                   |
| Passengers ... ..   | 10,721                       | 10,689        | + 32              | 82,675                    | 80,477         | + 2,198           |
| Parcels, etc., by passenger train ...                               | 3,042                        | 2,787         | + 255             | 26,210                    | 24,419         | + 1,791           |
| Merchandise & livestock ...   | 7,833                        | 7,879         | - 46              | 73,290                    | 72,438         | + 852             |
| Minerals ... ..   | 3,349                        | 3,087         | + 262             | 30,795                    | 28,288         | + 2,507           |
| Coal & coke ... ..  | 8,067                        | 7,260         | + 807             | 73,524                    | 68,610         | + 4,914           |
| <b>Total British Railways ...</b>                                   | <b>33,012</b>                | <b>31,702</b> | <b>+ 1,310</b>    | <b>286,494</b>            | <b>274,232</b> | <b>+ 12,262</b>   |
| <b>British Railways C. &amp; D. ...</b>                             | <b>881</b>                   | <b>843</b>    | <b>+ 38</b>       | <b>7,962</b>              | <b>7,812</b>   | <b>+ 150</b>      |
| <b>British Road Services ...</b>                                    | <b>5,980</b>                 | <b>5,762</b>  | <b>+ 218</b>      | <b>53,406</b>             | <b>52,273</b>  | <b>+ 1,133</b>    |
| <b>Road Passenger Transport :<br/>Provincial &amp; Scottish ...</b> | <b>4,867</b>                 | <b>4,674</b>  | <b>+ 193</b>      | <b>35,167</b>             | <b>33,579</b>  | <b>+ 1,588</b>    |
| <b>London Transport—</b>  |                              |               |                   |                           |                |                   |
| Railways ... ..   | 1,347                        | 1,372         | - 25              | 12,326                    | 12,264         | + 62              |
| Buses & coaches ... ..  | 3,293                        | 3,251         | + 42              | 27,898                    | 27,089         | + 809             |
| Trolleybuses & trams ...  | 716                          | 723           | - 7               | 6,270                     | 6,634          | - 364             |
| <b>Total London Transport ...</b>                                   | <b>5,356</b>                 | <b>5,346</b>  | <b>+ 10</b>       | <b>46,494</b>             | <b>45,987</b>  | <b>+ 507</b>      |
| <b>Ships ... ..</b>   | <b>1,428</b>                 | <b>1,523</b>  | <b>- 95</b>       | <b>8,440</b>              | <b>8,609</b>   | <b>- 169</b>      |
| <b>Inland Waterways : Carry-<br/>ing ... ..</b>                     | <b>66</b>                    | <b>75</b>     | <b>- 9</b>        | <b>623</b>                | <b>615</b>     | <b>+ 8</b>        |
| <b>Total from passengers ...</b>                                    | <b>21,809</b>                | <b>21,646</b> | <b>+ 163</b>      | <b>168,614</b>            | <b>164,351</b> | <b>+ 4,263</b>    |
| <b>Total from freight, parcels<br/>&amp; mails ... ..</b>           | <b>29,781</b>                | <b>28,279</b> | <b>+ 1,502</b>    | <b>269,972</b>            | <b>258,756</b> | <b>+ 11,216</b>   |
| <b>TOTAL FROM CARRY-<br/>ING ACTIVITIES ...</b>                     | <b>51,590</b>                | <b>49,925</b> | <b>+ 1,665</b>    | <b>438,586</b>            | <b>423,107</b> | <b>+ 15,479</b>   |

British Railways passenger receipts were barely up on last year's, but no deduction can be made, because of the various fare alterations in the past year. The same applies

to the slight decline against 1952 in London Transport railway and the rise in bus and coach receipts. With the increase in London Transport working costs, the increase in receipts of only £10,000 over last year in what should have been a very busy summer on account of the Coronation and resultant tourist traffic in London, is disappointing. The B.T.C. provincial and Scottish bus undertakings seem to have had a fairly prosperous August, with receipts 4.1 per cent up on 1952, but here again, as with all bus undertakings, costs probably rose at least as much.

Road haulage receipts continued well above last year's figure; this shows that the results of the effort put in since formation of British Road Services six years ago, which have only just begun to show, have not yet been undone by the impending disposal of some of the Road Haulage Executive assets. The decrease compared with 1952 in shipping receipts presumably is the result of the French strikes.

|                                     | PERCENTAGE VARIATION 1953 COMPARED WITH 1952 |                            |
|-------------------------------------|--|----------------------------|
|                                     | 4 weeks to<br>September 6                    | 36 weeks to<br>September 6 |
| <b>British Railways—</b>            |  |                            |
| Passengers ... ..                   | + 0.3  | + 2.7                      |
| Parcels ... ..                      | + 9.1  | + 7.3                      |
| Merchandise & livestock ...         | + 0.5  | + 1.1                      |
| Minerals ... ..                     | + 8.4  | + 8.8                      |
| Coal & coke ... ..                  | + 11.1                                       | + 7.1                      |
| <b>Total ... ..</b>                 | <b>+ 4.1</b>                                 | <b>+ 4.4</b>               |
| <b>C. &amp; D. Services ... ..</b>  | <b>+ 4.5</b>                                 | <b>+ 1.9</b>               |
| <b>Ships ... ..</b>                 | <b>- 6.2</b>                                 | <b>- 1.9</b>               |
| <b>British Road Services ...</b>    | <b>+ 3.7</b>                                 | <b>+ 2.1</b>               |
| <b>Road Passenger Transport ...</b> | <b>+ 4.1</b>                                 | <b>+ 4.7</b>               |
| <b>London Transport—</b>            |  |                            |
| Railways ... ..                     | - 1.8  | + 0.5                      |
| Buses & coaches ... ..              | + 1.2  | + 2.9                      |
| Trolleybuses & trams ...            | - 0.9  | - 5.4                      |
| <b>Total ... ..</b>                 | <b>+ 0.1</b>                                 | <b>+ 1.1</b>               |
| <b>Inland Waterways ... ..</b>      | <b>- 5.0</b>                                 | <b>+ 1.6</b>               |
| <b>Aggregate ... ..</b>             | <b>+ 3.3</b>                                 | <b>+ 3.6</b>               |

### High-Speed Trains

(By a North Eastern Correspondent)

**O**N September 27, 1925, the North Eastern area was all agog over the opening of the first public railway in the world between Stockton and Darlington. Exactly 110 years later the area was again astir when, on September 30, 1935, the first British streamline train, the "Silver Jubilee," inaugurated a four-hour service between Newcastle and London, a distance of 268½ miles. Leaving Newcastle at 10 a.m. and Darlington, its one stopping place, at 10.42, the new train steamed into Kings Cross at 2 p.m. Its average throughout speed was slightly over 67 m.p.h., but on the 232 miles south of Darlington the average rose to 70.3 m.p.h. Passengers travelled at these high speeds in perfect comfort and the "Silver Jubilee" became a popular institution with the people of Tyneside and Tees-side. The choice of 5.30 p.m. as the starting time of the return journey suited the needs of most of the influential traders on the North East coast.

The success of the "Silver Jubilee" encouraged the L.N.E.R. to provide two trains, named the "Coronation," for a six-hour service between Edinburgh and London, which started in July, 1937. One stop was made at Newcastle on the up journey and one at York on the down run, the 188 miles from Kings Cross being covered at 71.9 m.p.h. In September, 1937, a third streamline service was instituted between the West Riding and London; an average speed of 68 m.p.h. over the 186 miles from Leeds to Kings Cross reduced the journey time to 2½ hr.

These three high-speed services were spectacular features in a general improvement in passenger services which dated from the early 30s. By 1932, L.N.E.R. passenger receipts declined to 65 per cent of the 1923 takings. Stern necessity forced the company to try new methods of operation, and

one plan to attract passengers involved the quickening of train services all round. From 1933 onwards the L.N.E.R. gradually increased the average speed of steam passenger trains, apart from a slight setback in 1937 when passenger and freight traffics were heavy. In 1938, the only complete year in which the three high-speed services were run, the coaching steam train speed for the L.N.E.R. system was a record at 14.55 m.p.h. and the North Eastern Area speed of 16.21 m.p.h. was the highest average for any company or area included in the Ministry of Transport returns. Concurrently, the L.N.E.R. freight train speed was 9.27 m.p.h., while the North Eastern Area recorded 10.96 m.p.h.

These results do not support the statement made in the Railway Executive official booklet "Facts and Figures about British Railways" that "the very few ultra-high-speed trains," run before the war, "had a delaying effect upon a large number of other services." In 1938, the L.N.E.R. high-speed trains ran 1,700 miles a day, five days

a week, and accounted for only 0.5 per cent of the total coaching steam train mileage. Their total running time was 25½ hours a day so that their occupation of the main lines was not excessive. Of one thing there is no doubt; the running of the high-speed trains put the railway staff on their mettle and they not only saw that the streamliners got through on time but also kept other traffic moving. Any railwayman worth his salt welcomes enterprise which adds zest to the daily round of work: a policy that damps down initiative leaves him cold and apathetic. The introduction of the "Elizabethan," running without a stop between the capital cities in 6½ hr., was the highlight of this year's summer timetable. North Eastern men hope that it will be the herald of better times to come. They never could understand why the "Silver Jubilee" was not reinstated after the war, with any necessary modification in timing, instead of a Pullman train with rather too early a departure time for the evening journey back to the North.

## LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

### Steam and Diesel Performance

September 19

SIR.—The recasting of the timetables in East Anglia partly so as to give the best performance with modern steam locomotives is most refreshing. It is hoped that this might be repeated elsewhere, with perhaps some real improvement in locomotive shed facilities at terminal points. If this is done, perhaps some of those who consider the days of the steam locomotive over might think again.

The capability of the modern diesel to produce some excellent figures of mileage and availability in ideal conditions, and when working, is no longer in doubt. The four main-line diesels working in the Western Section of the Southern Region have not been that much in evidence this summer. For about six weeks in July and August only one was working and I believe only on about five days have all four ever been in action at once. Meanwhile steam has usefully filled the breach with some very useful performances. A locomotive has been recorded several times as working up on the 5.55 p.m. from Exeter; returning on the 1.25 a.m. from Waterloo; up on the 7.30 a.m.; and returning on the 3.0 p.m.

Yours faithfully,

J. B. LATHAM

18, Wheatsheaf Close, Woking

### Improving Railway Statistics

September 5

SIR.—After the article printed in your August 28 issue was written, a brochure entitled "Railroad Transportation" came from the Bureau of Railway Economics, Association of American Railroads. In 34 tables and six charts this booklet presents a statistical record of U.S.A. railway development from 1911 to 1951. No such synopsis of British railway results exists to show the trend of events since 1913, when the private railway companies reached their zenith.

A distinct feature of the American statistics is the free use made of gross ton-miles, based on the weight of wagons and contents. The train load and the unit output per hour of freight train operation are computed in both gross and net ton-miles. The gross train load of 1,443 tons in 1920 grew to 2,774 tons in 1951, while freight train speed advanced from 10 to 17 m.p.h. Over the same period, gross ton-miles per freight train hour rose from 14,877 to 46,424—an advance of 212 per cent. To bear that burden, by 1951, rails weighing 110 lb. per yard or more had been laid in 103,600 miles of first, second, and all other main track.

A useful table shows the distribution of commercial

intercity freight ton-miles between the various types of transport from 1939 to 1951. The rail percentage of the total volume dropped from 64 to 59 and the water carriers' share fell from 16.9 to 15.2 per cent; the road hauliers' raised their percentage from 8.3 to 12 and pipelines increased their proportion from 10.6 to 13.7. The air ton-mileage was insignificant.

The railways fared worse over the division of commercial interurban passenger miles during the same 13 years, their percentage declining from 65 to 50. Buses and coaches accounted for 26 per cent of the passenger miles in 1939 and 31 per cent in 1951. Airlines made an astonishing advance from 2 to 15 per cent of the total, while electric interurban railways and inland waterways almost faded out of the passenger business. One wonders what a similar analysis of transport in Great Britain would reveal.

Yours faithfully,

YOUR CORRESPONDENT

Westminster, S.W.1

### British Railways Class "7" Locomotive Tests

September 15

SIR.—There is a statement in the article by Mr. E. C. Poultney in your issue of September 11, which, coming from such a source, may give rise to misunderstanding if not corrected. This concerns the Farnboro Indicator.

The Farnboro Indicator has been developed and adapted for work on steam locomotives precisely because the diagrams do lend themselves to locomotive requirements. Mr. Poultney may rest assured that the points of cut-off, release, compression, and admission can be defined quite as accurately, or more so, on the Farnboro diagrams as on those produced by any other indicator. It might perhaps be more correct to say that these points can be defined with no greater, or less, inaccuracy.

No type of indicator will indicate the pressure conditions in the steam chest if it does not happen to be applied to the steam chest. The Farnboro Indicator is quite capable of indicating the steam chest pressure, when it is required to do so, but, as this is not relevant to the measurement of the indicated horsepower of the locomotive, it was not done in the course of the determination of the i.h.p. characteristics of this locomotive, which was the only purpose for which those diagrams actually shown as samples in Test Bulletin No. 5 were taken.

Yours faithfully,

D. R. CARLING

Locomotive Testing Station,  
British Railways, Rugby

## THE SCRAP HEAP

### Taking a Long View

The distant view of Lincoln Cathedral from the East Coast main line between Newark and Retford is often quoted, although perhaps less often seen by occasional travellers because of the uncertainties of the British climate. Another and less familiar example of long-range visibility is mentioned by John Harvey in his book, "Gothic England" (B. T. Batsford, Limited). Writing of St. Michael's church, Coventry, he says: "Neither the directness of Giotto's famous campanile nor the complexities of Ulm can be ranked above the steeple of Coventry, which deserves mention as one of the wonders of the world. Once, travelling in an express train between Nuneaton and Rugby, I glanced out to the west, and by some accident which had cleared the atmosphere, Coventry appeared like a crystal city in the brilliant sunshine, set upon its hill, and dominating it, above its two attendant spires, soared the 300 ft. of St. Michael, portentous as its namesake's sword. It has never been my fortune to see it thus again . . ."

The distance is shorter here than from Lincoln to the East Coast main line, but the visibility is less likely to be favourable for a spectacle such as the author describes, and it would be interesting to know if any of our readers have had a similar experience.

### Brunel Relic

The Great Ship Co. Ltd. of which a share certificate illustrated below has been sent us by a correspondent, was the successor of the Eastern Steam Navigation Company, which ruined itself in building and launching the *Great Eastern*, some 700 ft. long and by far the biggest vessel of her day. She was designed by Isambard Kingdom Brunel, the engineer of the G.W.R., but though begun in May,

1854, not successfully launched until January 31, 1858, at a cost of £120,000 against Brunel's estimate of £14,000. After she had lain unfinished for a year, the newly formed Great Ship Co. Ltd. bought her for £160,000 and completed her in September, 1859. Anxiety about the *Great Eastern* is said to have hastened Brunel's death that year.

### All Change Station

The accompanying illustration shows the board on the down platform, at Gobowen Station, Western Region,



Photo] [R. C. Keep  
Board facing Oswestry branch bay platform at Gobowen, Western Region facing the bay used by Oswestry trains. The other side of the board reads "Gobowen for Oswestry."

### Better by Train

Rail travel is now the ideal way to see England and to enjoy the countryside. In remote, hilly, or mountainous districts the roads still afford scenic attractions, but the railways avoid the

frightfulness which disfigures nearly every main road, the shocking ribbon development and the sprawl of the new and not-so-new towns.

From the vantage point of the railway carriage window one recaptures the beauty of the countryside of half-a-century ago, the England that Constable painted. . . .

Even my own village, which I had not seen for years except from the road, was transformed when seen from the railway, passing through it to the nearest station.

Our ancestors hated the proximity of the railways. Today, the proximity of a main road is infinitely more distressing. —From a letter to "The Daily Telegraph."

### To George Bradshaw

(Died September 6, 1853)

Hail, cryptic spirit of the printed page,  
Archetype of travel in a far-off age,  
Who trailed Leviathan with line and hook  
And bound the new-born giant in a book.

In whatsoever empyrean sphere  
You now adorn, I wonder if you hear  
The sighs of anguish from the addled brains  
Of those who contemplate the use of trains,

When all who venture on the iron road  
Must seek instruction in your secret code,  
And take a course of "Bradshaw navigation"  
To find out how to reach their destination.

If you could see your offspring of today,  
Would you, dear George, appreciate the way  
The "ifs" and "buts" attending any train  
Extend from A to Z and back again?

Could you have known, would you have been annoyed  
To find your data rendered null and void  
At times, when some last-minute alteration  
Has made you out of date ere publication?

An unexhausted source of friendly fun,  
You've really been a boon to everyone  
And baffled rivals have recoiled in pique  
From envious combat with a force unique.

Had I to write your epitaph today  
(An absurd notion, I am glad to say),  
I would read: "O'er every obstacle progressing;  
"Old Bradshaw never failed to keep us guessing."

Safely enshrined in railway history,  
Master of tabulated mystery,  
You can look down and, with a smile or two,  
Now watch the railways take their times from you!

A. B.

E 2



Share certificate of the Great Ship Co. Ltd., which in 1859 purchased from the Eastern Steam Navigation Company and completed the s.s. "Great Eastern," designed by I. K. Brunel, the engineer of the G.W.R., and launched in the Thames at Millwall the previous year



## OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

### INDONESIA

#### American-Built Diesel Locomotives

The International General Electric Company is supplying 27 1,600 h.p. diesel-electric locomotives, weighing 96 tonnes apiece, to the State Railways. The first two were delivered last month.

Indonesian engineers have been receiving training at the General Electric works at Erie, Pennsylvania. Two of the company's service engineers are to go to Indonesia to place the locomotives in service and conduct training in their operation and maintenance.

### CANADA

#### Ontario Northland Shops Destroyed

A fire destroyed the wagon repair shops of the provincially owned Ontario Northland Railway on August 25. The repair and maintenance programme of the line will have to be drastically curtailed; in particular a major wagon repair programme about to begin will be postponed indefinitely. Plans for a new shop will be drawn up immediately.

### UNITED STATES

#### New Illinois Central Stock

Six all-bedroom Pullman sleeping cars, costing approximately \$1,150,000, have been delivered to the Illinois Central by Pullman Standard. Each has eleven bedrooms. Folding chairs have replaced the conventional divan or sofa type of seat,

giving these bedrooms the effect of the larger drawing rooms. The lower bed pulls out of the side wall, and the upper bed descends from the ceiling on a metal track.

They are in service on the "Panama Limited," between Chicago and New Orleans, and on the "City of Miami" between Chicago and Florida. In 1950 the Illinois Central placed thirteen new six-bedroom-ten-roomette cars in service on these trains. In 1951 twin-unit dining cars costing more than \$500,000 were added to the "Panama Limited."

#### An 850-mile Journey for 2,640-ft. Rails

In preparation for the continuous welding of rails through its Stampede tunnel, near Seattle, the Northern Pacific Railroad recently carried out the remarkable operation of moving a string of rails 2,640 ft. long over a distance of 850 miles. This was from its welding plant at Big Timber, Montana, where 140 lb. per yd. flat-bottom rails in ordinary mill lengths were welded into these half-mile lengths, to the tunnel. The rails were moved on a train of 60 open-ended 40-ft. ballast wagons. On reaching the site the half-mile lengths were further welded into 2-mile lengths for laying in the tunnel. To date, the Northern Pacific has 42 miles of continuously welded track.

#### Increased Chicago Suburban Fares

The Chicago, Burlington & Quincy Railroad has advised its season ticket-holders that it must seek from the Illinois Commerce Commission authority to in-

crease its suburban fares to and from Chicago. In an illustrated pamphlet circulated in its suburban trains on June 10, the Burlington set out all the costly improvements that it has effected in its suburban working since 1948, including substitution of diesel for steam locomotives, building of 40 new stainless steel "gallery" or double-deck cars, modernisation of 88 existing coaches with air-conditioning, new seats, lights, decorations, and double windows, and rearranged tracks to permit higher speeds.

The pamphlet pointed out that the increase sought, which will average 27 per cent on all types of ticket, was inevitable in present conditions. The Illinois Central System already has been granted a similar increase on its Chicago electric suburban services.

### BRAZIL

#### Central Railway Rolling Stock

The Ministry of Communications & Public Works has been authorised to put out to contract repair of Rio suburban stock of the Central Railway. The Minister has pointed out that the railway repair shops are not able to carry out the work within twelve months, the time allowed under the re-organisation plan, and that it is urgently necessary to do so.

### FRANCE

#### Station Garages

Since the end of 1949 the S.N.C.F. has provided covered garage accommodation, for motorists travelling by train, at twenty-six stations in important industrial or agricultural areas. It had become evident that such a facility would be greatly valued by motorists living a considerable distance from the station, and might encourage the use of the railway for long journeys by private motorists.

The first such garage was opened at La Souterraine. Other stations now served include Reims, Dunkirk, Sedan, Savenay, Limoges, Etampes and Vichy. The garages have normally been sited at stations where garage facilities are not otherwise available nearby, and the rule is rigidly adhered to that the garages shall only be used by motorists proceeding by rail. The fee for garaging a vehicle is fr. 100 (approximately 2s.) for each 24 hr. period.

At the garage at Reims, opened in December, 1951, 36 vehicles can be accommodated. It is open daily from 5.30 a.m. to 11.30 p.m. During 1952 a total of 3,000 cars was garaged, the fees collected totalling fr. 400,000 (£400). During the first six months of 1953 more than 2,100 cars were garaged at Reims, compared with 1,400 in the corresponding period in 1952.

### Fuel Economy Measures in South-East Asia



Photo]

[J. van Stappen

*Viet-Nam Railway locomotive burning short wood billets in accordance with Economic Commission for Asia & the Far East recommendations for fuel economy (See article in our May 1 issue)*

## Organisation of Nationalised Transport

*Announcement by B.T.C. on interim organisation for the railways and new managing bodies for docks and inland waterways and for hotels and catering*

**F**OLLOWING upon the statement made in the House of Commons on July 29 by Mr. Alan Lennox-Boyd, Minister of Transport, that all the Executives of the British Transport Commission, except for the London Transport Executive, would be abolished as from September 30, the British Transport Commission has announced some details of the arrangements which will operate as from October 1. So far as the public is concerned, it is pointed out, there will be no change or interruption in the course of business, and the continuity of the operation of the various services will not be in any way affected.

### Interim Organisation for Railways

The arrangements to be made for carrying on the management of British Railways represent, it is emphasised, an interim organisation pending the re-organisation of British Railways envisaged under the Transport Act of 1953. The Act gives the Commission twelve months, or longer if the Minister of Transport agrees, to complete its scheme of railway re-organisation for submission to the Minister and Parliament. The arrangements will ensure continuity of administration and will be without prejudice to the statutory scheme.

The constitution of the Commission has been increased by the Act of 1953 to a maximum of fifteen Members, including the Chairman, instead of nine persons in all; and of these two at least are to be appointed by the Minister after consultation with the Secretary of State for Scotland as being conversant with the circumstances and special needs of Scotland. The Minister is enjoined by the Act to have regard to the desirability that Members have experience in railway and road transport management and organisation of labour or otherwise are conversant with the requirements of agriculture, commerce, and industry.

The primary function of the Commission is stated to be control of major policy, including finance, and general direction. For this purpose, and to ensure a common line of action in matters of nation-wide significance besides the quick settlement of inter-Regional questions, and for the conduct of certain common and central services, the Commission will be assisted by an expert headquarters staff.

### Chief Regional Managers

The Regions of British Railways will remain for the time being as now constituted, but the Chief Regional Officers will be given certain additional powers and will be known as Chief Regional Managers. Each Chief Regional Manager will be responsible for all railway activities, commercial, operating, and technical, in his Region, and will report

directly to the Commission. It will be the duty of the Chief Regional Managers to co-operate with the other sections of the Commission's undertaking, namely, London Transport, British Road Services, the omnibus companies, the docks and inland waterways, and the hotels and catering services, so as to develop and improve all the transport resources of the Commission's undertaking as a whole.

The following, who at present are Chief Regional Officers, have been appointed Chief Regional Managers, in each case of the Region of which he is now C.R.O.: Eastern Region, Mr. C. K. Bird; Scottish, Mr. T. F. Cameron; Western, Mr. K. W. C. Grand; Southern, Mr. C. P. Hopkins; North Eastern, Mr. H. A. Short, C.B.E., M.C.; and London Midland Region, Mr. J. W. Watkins, C.V.O., D.S.O., M.C.

### Message to British Railways Staff

The statement points out that as from October 1, the Commission will become the employer of all officers and staff of British Railways, and to them Sir John Burstead, C.B.E., Deputy-Chairman of the B.T.C., has addressed the following message:—

"The Commission fully appreciate the uncertainties which some members of the railway service are experiencing at the present time. They know that conscientious work is being done and will continue to be done by all sections of the staff to serve the travelling public, and to meet the needs of industry. The Commission are satisfied that the interim arrangements from October 1 will work smoothly, and confidently rely upon the goodwill which is the tradition of the railway service."

### British Road Services

Arrangements for an organisation to perform some of the duties now performed by the Road Haulage Executive were announced on August 20; these were briefly described and commented on in our issue of August 28. A Board of Management for British Road Services has been appointed, of which Major-General G. N. Russell, the present Chairman of the Road Haulage Executive, is to be Chairman, with three full-time and two part-time Members. The three full-time Members of the Board will be Mr. Claud Barrington, Mr. George Sinclair, both Members of the existing Executive, and Mr. G. W. Quick Smith, Secretary of the Road Haulage Executive since 1948. One of the principal functions of the new Board will be supervision of disposal of the assets of British Road Services.

### Docks and Inland Waterways

The Docks & Inland Waterways Executive also will be replaced by a Board of Management, which is to consist of

a Chairman, Sir Reginald Hill, at present Chairman of the Docks & Inland Waterways Executive; and of Sir Robert Letch and Mr. John Donovan, both full-time Members of the existing D.I.W.E. In the course of the debates on the Transport Bill in the last session of Parliament, Government spokesmen stated that it was not the intention of the Government to return to railway management the docks formerly owned by the railways and now managed by the Docks & Inland Waterways Executive.

### Hotels and Catering

The B.T.C. announcement stated that the Hotels Executive will be replaced by a Hotels & Catering Services Committee of the Commission, of which the Chairman will be Sir Harry Methven, who has been appointed a part-time Member of the Commission, as recorded on another page. This part of the Commission's undertaking will be known as British Transport Hotels & Catering Services. Mr. F. G. Hole, a Member of the existing Hotels Executive, has been appointed Chief of the Hotels & Catering Services.

### London Transport Executive

London Transport will continue unaltered as an Executive of the Commission, under the chairmanship of Mr. John Elliot, at present Chairman of the Railway Executive, for a period of at least one year, as announced by the Minister. Editorial reference to Mr. Elliot's appointment is made elsewhere in this issue, and a brief biography is given in our personal columns.

### Road Passenger Undertakings

The Commission's road passenger undertakings in Scotland and the provinces will continue to be managed as at present, it is announced. The undertakings are organised in two groups, the Scottish Omnibus Group (B.T.C.) and the Tilling Group Management Board (B.T.C.), both responsible to the Commission. The Road Passenger Executive, established in June, 1949, under an order of the Minister of Transport in the Labour administration, Mr. Alfred Barnes, was abolished by the present Minister as from September 30, 1952.

### Change of Address of Commission

As from October 1, the offices of the British Transport Commission will be transferred from 55, Broadway, S.W.1, where they occupy part of the premises built by the London Passenger Transport Board over St. James's Park Underground station and occupied mainly by London Transport head-quarter offices, to 222, Marylebone Road, N.W.1, the present offices of the Railway Executive.

## British Railways Class "7" Locomotive Tests—2\*

*Steam temperatures obtained due to the large superheating surface*

*By E. C. Poultney, O.B.E.*

THE temperatures of the admission steam in relation to the rate of cylinder feed steam lb. per hour and the temperatures in the firebox and smokebox, together with the admission steam temperatures plotted against firing rates are shown in Figs. 3 and 4. These plots relate to the tests made when using Blidworth coal.

As to the superheated steam conditions, attention is drawn to the very satisfactory temperatures obtained by the large superheater because of the superheating surface and to the high propor-

Complete information concerning the working of the boiler is given in Fig. 5, which is largely self-explanatory, though attention may be drawn to the fact that the lower left-hand panel gives the relation between the coal "fired" and the coal "burned," and also contains a further curve showing what is termed the "excess air" per cent, by which is meant the excess in the amount of air supplied over that required for the complete combustion of the coal actually "burned."

It would appear from this plot that the

the exhaust steam injector is given as being 22,000 lb. of water per hour, which corresponds to firing rates of 2,813 and 3,411 lb. of coal respectively for the fuels mentioned.

The estimated rate of firing for one fireman and which is stated to be equal to approximately five shovels of coal per minute is given as being 3,000 lb. of coal per hour for continuous working. This rate of firing corresponds to cylinder feeds of 24,510 and 21,060 lb. of steam per hour. Under such conditions, the respective boiler efficiencies would be 75

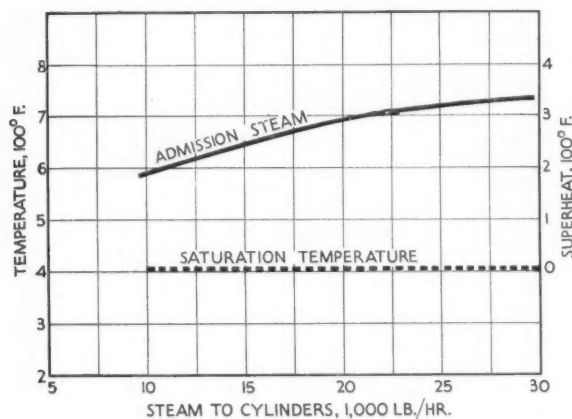


Fig. 3.—Temperatures of admission steam in relation to cylinder feed, using Blidworth coal

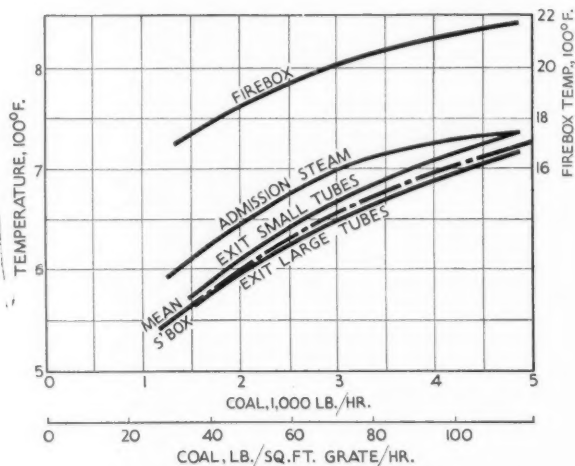


Fig. 4.—Coal fired per hour, using Blidworth coal, and firebox temperatures

tion of the net gas area through the flues, which amounts to 60.9 per cent of the total gas passage area through the boiler. It will be noted that the steam temperature ranges from 590 to about 730° F.

In Fig. 4, particulars are given of the gas temperatures, those indicating the firebox temperatures, admission steam and mean smokebox temperatures being of particular interest. For instance, independent of the rate of firing and hence gas production, there is an almost constant difference between the firebox and smokebox temperature, meaning that there is a fixed drop in gas temperatures as they pass through the tube nest independent of the rate of gas flow which, for the tests under notice, varied between 16,000 and 55,500 lb. per hour. Similarly, it will be observed that steam temperatures follow those shown in the firebox, thus indicating that the amount of superheat imparted to the steam is dependent on the gas temperatures in the flue tubes and is not influenced by the rate of steam flow through the elements comprising the superheater.

\* Part 1 appeared in our September 11 issue

computed amount of air required to completely "burn" one pound of Blidworth coal is about 10.5 lb., while the air actually present in the products of combustion is shown to be about 16.8 lb. per lb. of coal "burned" at about the lowest rate of firing. At maximum firing rates, the air in excess of that required falls to about 28 per cent when out of a total of 4,500 lb. of coal "fired" it would appear 3,500 lb. are actually "burned" thus indicating a combustion efficiency amounting to 78 per cent.

### Boiler Limitations

The evaporative capacity of the boiler is shown by Fig. 1, Part I, to be limited to maximum firing rates of 4,320 and 5,066 lb. of coal per hour for South Kirkby and Blidworth coal. Concerning this, the report states that "the maximum boiler capacity is deliberately limited by the draughting arrangement provided, which is such to promote economical combustion at normal rates of working." The above rates of firing correspond to actual evaporations of 30,200 and 30,000 lb. of water per hour. The capacity of

and 72.5 per cent and the water/coal ratios 7.7 and 6.6 respectively.

When considering the performance of the engines, attention will largely be given to the results shown when using Blidworth coal, for the reason that the principal object of building large locomotives with a wide firebox and with ample grate area is the possibility of producing the powers required when relatively low grades of coal are to be used, and which may have a low heat value and perhaps a high ash content. Actually, the quality of fuel used will not influence cylinder performance except in so far as the coal used might affect the amount of superheat carried by the cylinder feed.

The performance of the engines when Blidworth coal is being used is well shown by Fig. 6, giving the powers developed in the cylinders at speeds extending from 20 up to 75 m.p.h. This and the succeeding graphs provide a complete picture of the cylinder performance. Fig. 7 gives the specific steam rates per i.h.p. hour, which are seen to reach minimum consumptions of as little as 13.3 lb. per i.h.p. hour when the cylinder feed



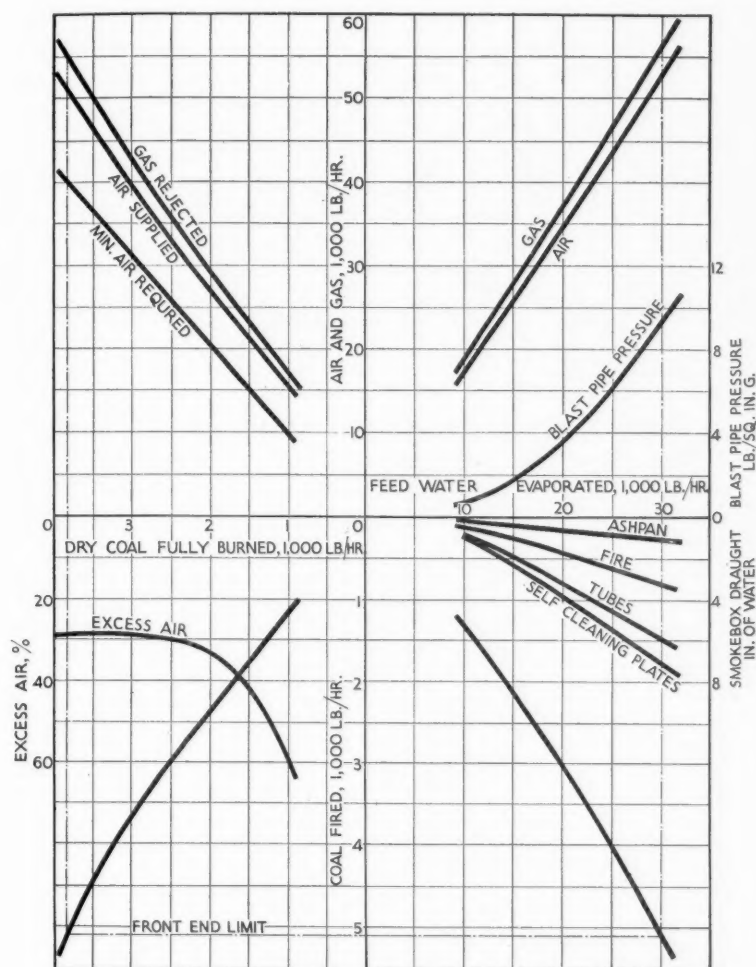


Fig. 5.—Steam, air supply, gas produced, and combustion

is 20,000 lb. of steam per hour and at speeds of 60 to 70 m.p.h., the cut-off being about 22 per cent.

Furthermore, at the speeds mentioned, and for powers ranging from 1,150 to 2,100 i.h.p., the steam rate is seen to be 14 lb. or less per i.h.p. hour. The most economical rates of working, so far as coal consumptions are concerned, are between the limits of 1,250 and 1,400 i.h.p., the coal required per i.h.p. hour being only 1.85 lb. When the steam flow to the cylinders is 22,000 lb. per hour and at speeds of 60 to 70 m.p.h., the respective steam and coal rates are 13.3 and 1.92 lb. per i.h.p. hour. The coal consumption figures are given in Fig. 8.

#### Cylinder Efficiencies

The efficiency of the steam action in the cylinders has a maximum value of 14 per cent at powers of 1,300 to 1,600 i.h.p. and speeds of from 60 to 70 m.p.h., the cylinder feed ranging from about 17,000 to 21,000 lb. of steam per hour. At these rates of steam flow to the cylinders, the superheat carried by each lb. of steam is respectively 275 and 300° F.

The efficiency of the power plant, which includes the boiler and the engine, is shown in Figs. 9 and 10. These plots give the efficiency based on the cylinder horsepowers developed, and are seen to range between the limits of 7 and 12 per cent when South Kirkby coal is fired, and the information given concerning the efficiencies attained when Blidworth coal is used indicates that the efficiencies ranged from 7 to 10 per cent.

Assuming a rate of steam supply to the cylinders of 22,000 lb. per hour and a speed of 60 m.p.h., the i.h.p. would be 1,650 and the efficiency just over 11.5 per cent for South Kirkby, and for Blidworth in the same conditions the efficiency would be 10.5 per cent. An efficiency of 12 per cent was reached when South Kirkby coal was fired with a cylinder feed of 20,000 lb. per hour at speeds from 60 to 75 m.p.h. when the cylinder horsepower ranged close to 1,500, and the same efficiency is shown for a rate of cylinder feed of 16,000 lb. of steam per hour, or slightly less for speeds of 50-75 m.p.h., when the powers developed are 1,150-1,180 i.h.p.

From the practical point of view of train operation, the actual powers developed at the drawbar between the locomotive and the train are of interest, and the drawbar horsepowers obtained are shown in Figs. 11 and 12 for South Kirkby and Blidworth coal respectively. The former includes the powers developed at high rates of evaporation attained during a series of road tests when as much as 36,000 lb. of tank water per hour was evaporated and when drawbar horsepowers ranged from 2,000 to about 2,020 at speeds of 35 to 50 m.p.h. For speeds between 20 and 70 m.p.h., Figs. 13 and 14 give details of coal consumptions per d.b.h.p. hour for South Kirkby and Blidworth coal respectively, bringing out the difference caused by firing of fuels varying in calorific values and evaporative powers.

#### Consumption of South Kirkby Coal

Referring to graph Fig. 11 showing the powers developed at the drawbar in relation to speed miles per hour on a level tangent track, it will be seen that particulars are included giving the results obtained during tests made on the road when exceptionally high powers were recorded, which reached a maximum of about 2,050 d.b.h.p. at 44 m.p.h. At this power output, the firing rate was 5,660 lb. per hour and the feed water supplied was 36,000 lb. per hour. When operating at this rate, the water evaporated was 14.6 lb. per sq. ft. of evaporative heating surface per hour and the firing rate 134 lb. of coal per sq. ft. of grate area per hr. Based on the power developed, the consumptions of coal and water per d.b.h.p. hr. are 2.76 lb. and 17.6 lb. respectively, and the water evaporated per lb. of coal fired, 6.4 lb.

The graph does not show precisely the cut-off required to develop what would seem to be close to, if not quite, capacity operation, though from the run of the cut-off curves relating to the d.b.h.p. characteristics at lower rates of evaporation corresponding to more normal rates of working, the cut-off would appear to be about 47 per cent. The coal fired per d.b.h.p. hr. of 2.76 lb. corresponds to a thermal energy consumption of 38,000 B.Th.U. per h.p. hr., which is equal to an efficiency of 6.7 per cent.

The capacity of the exhaust steam injector is 22,000 lb. of feed water per hr. when the firing rate is 2,820 lb. per hr. as given by Fig. 11. On the assumption that these rates are the average maintained, then, at speeds of from 20 to 70 m.p.h. the available powers at the tender drawbar and the corresponding coal rates would be as follows:—

| M.p.h. | D.B.H.P. | Coal rate lb. per d.b.h.p. hr. |
|--------|----------|--------------------------------|
| 20     | 1,255    | 2.22                           |
| 30     | 1,360    | 2.08                           |
| 40     | 1,390    | 2.04                           |
| 50     | 1,350    | 2.09                           |
| 60     | 1,275    | 2.21                           |
| 70     | 1,175    | 2.40                           |

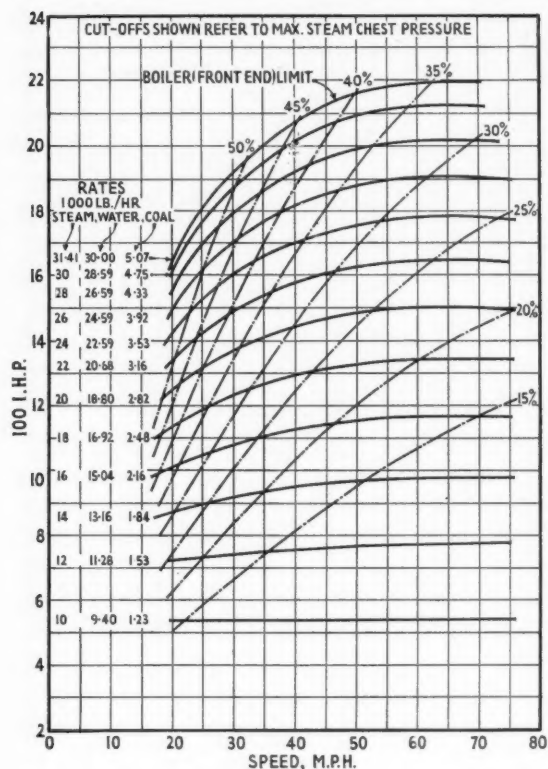


Fig. 6.—Indicated horsepower characteristics with Blidworth coal

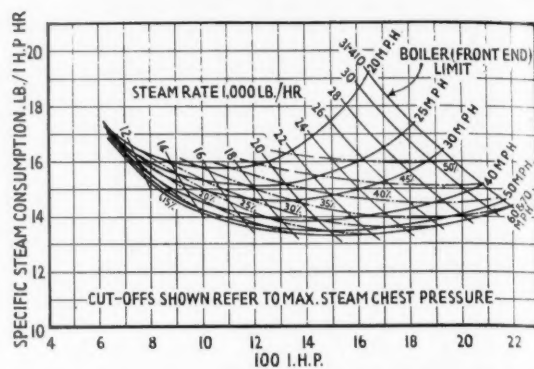


Fig. 7.—Steam consumption per i.h.p. hr. Blidworth coal

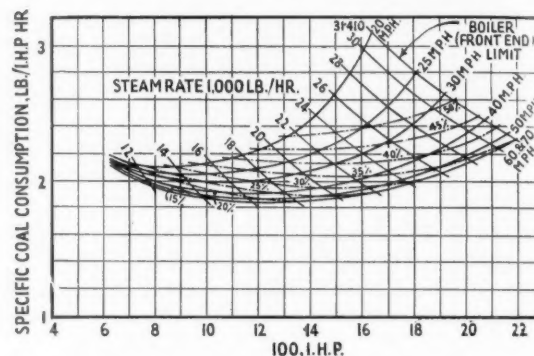


Fig. 8.—Coal consumption per i.h.p. hr., using Blidworth coal

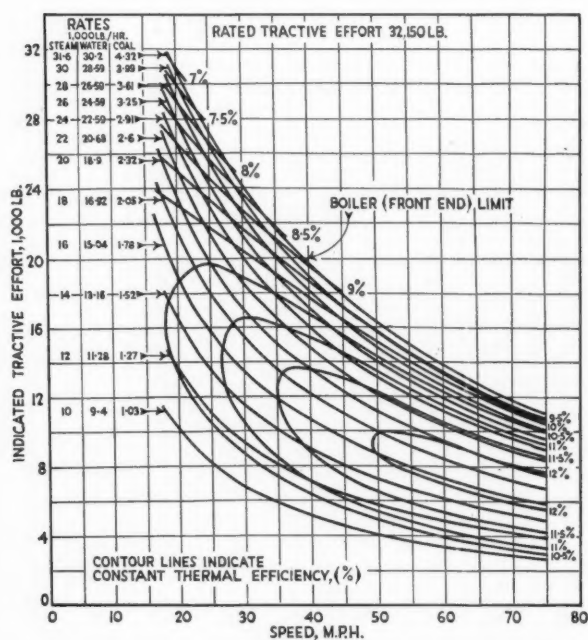


Fig. 9.—Overall efficiency referred to cylinders, using South Kirkby coal

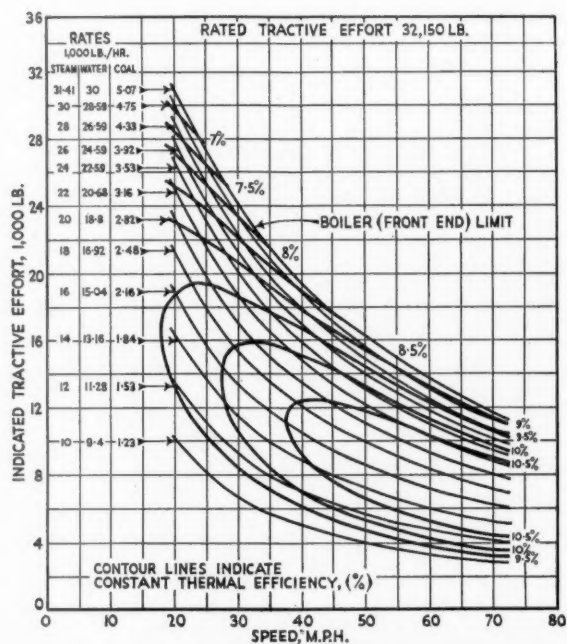


Fig. 10.—Overall efficiency referred to cylinders, using Blidworth coal

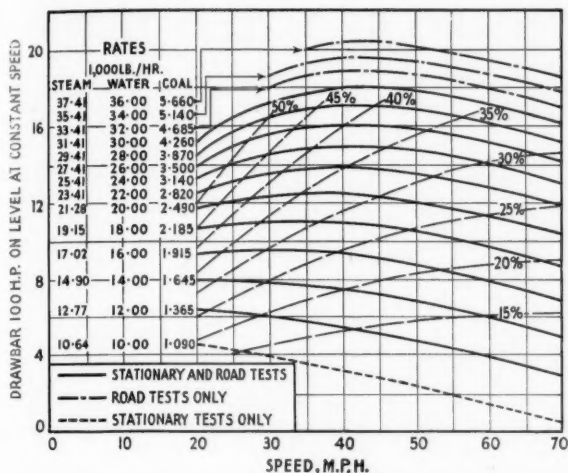


Fig. 11.—Drawbar horsepower and speed m.p.h. with South Kirkby coal

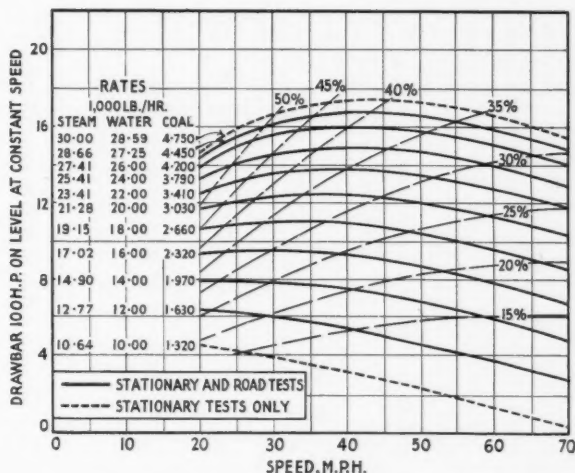


Fig. 12.—Drawbar horsepower and speed m.p.h. with Blidworth coal

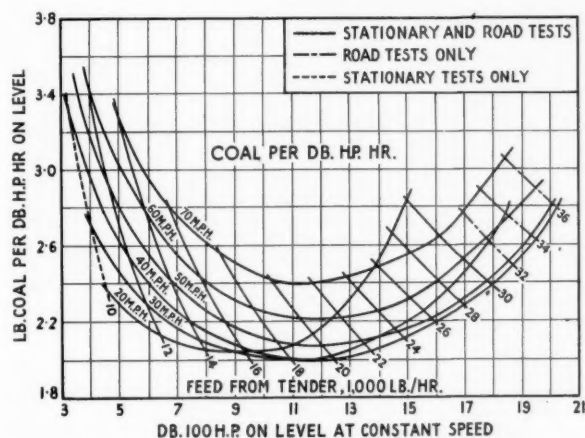


Fig. 13.—Coal per drawbar horsepower hr. over level track, using South Kirkby coal

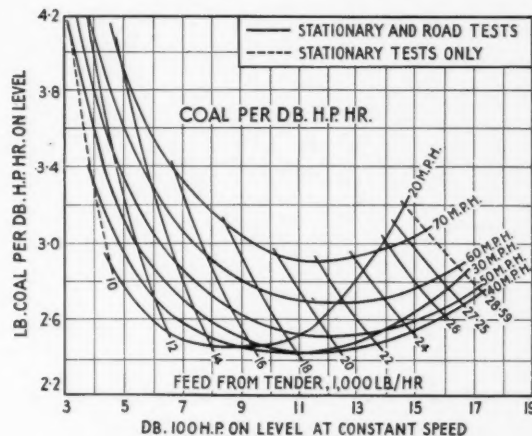


Fig. 14.—Coal per drawbar horsepower hr. with Blidworth coal

The graphs 11 and 12 show no measurable difference between the powers developed at given rates of cut-off per cent and equal speeds in miles per hr., which is due to the fact that for equal running conditions the feed water supply from the tender was the same. Further, as for any rate of actual evaporation the equivalent evaporations were so closely the same, it follows that the heat input to the cylinders was also closely equal at the same speeds and rates of admission.

#### Consumption, Blidworth Coal

The highest power when using Blidworth coal was 1,750 d.b.h.p. obtained during tests on the Rugby Testing Plant at a speed of about 43 m.p.h. At this power output, the coal fired was 4,750 lb. per hour and the feed water supply 28,590 lb. per hr., giving consumptions of coal and water per d.b.h.p. hr. of 2.71 and 15.3 lb. respectively. At a constant rate of evaporation of 22,000 lb. per hr., Fig. 12 shows that the firing rate was 3,410 lb. of coal per hr., and at this rate of firing the coal consumptions per

d.b.h.p. hr. at speeds of from 20 to 70 m.p.h. would be as follow:—

| M.p.h. | D.B.H.P. | Coal rate lb. per d.b.h.p. hr. |
|--------|----------|--------------------------------|
| 20     | 1,255    | 2.74                           |
| 30     | 1,360    | 2.51                           |
| 40     | 1,390    | 2.44                           |
| 50     | 1,350    | 2.52                           |
| 60     | 1,275    | 2.68                           |
| 70     | 1,175    | 2.93                           |

Assuming again a constant running cut-off of 25 per cent, the coal rates per available d.b.h.p. hr. as speeds varying from 20 to 70 m.p.h. would be as given in the next table.

| M.p.h. | D.B.H.P. | Coal rate lb. per d.b.h.p. hr. |
|--------|----------|--------------------------------|
| 20     | 600      | 2.71                           |
| 30     | 790      | 2.48                           |
| 40     | 955      | 2.47                           |
| 50     | 1,065    | 2.53                           |
| 60     | 1,140    | 2.63                           |
| 70     | 1,175    | 2.93                           |

It is of interest to note that, when operating under a constant steam supply or at a constant cut-off for the

speeds shown, the best speed would appear to be 40 m.p.h. At a constant rate of evaporation, powers decrease as the speed increases and at a constant running cut-off of 25 per cent there is also a loss in power output with increasing speeds. When the cylinder feed is constant, the heat content per lb. of steam is also constant, but increasing speeds decrease the heat input to the cylinders per stroke and, therefore, reduce the power developed even though piston speeds increase.

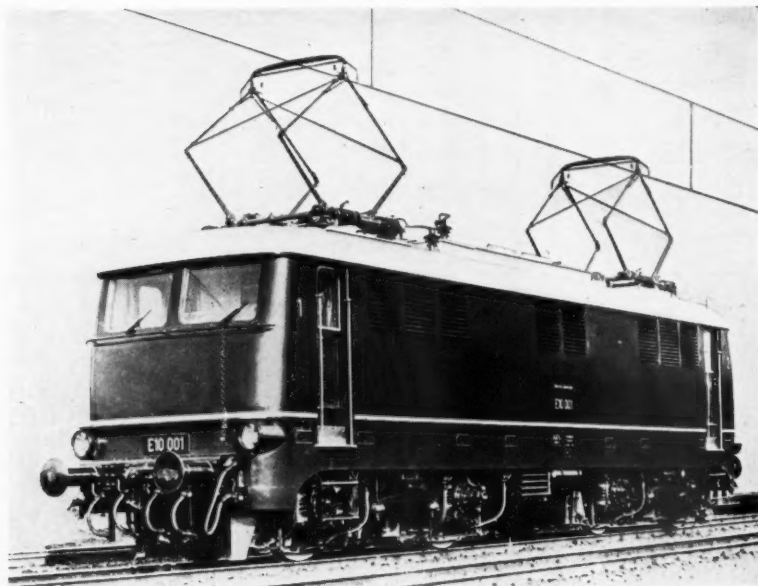
(To be continued)

WITHDRAWAL OF PASSENGER SERVICE AT GUYHIRNE STATION.—On and from October 5, 1953, the passenger train service will be withdrawn from Guyhirne Station, Eastern Region. Passengers will be catered for by local omnibus services. Facilities for the acceptance of fruit, flowers and parcels traffic for conveyance by passenger train service will be available in Guyhirne goods yard, where any parcels consigned to Guyhirne, to be called for, will also be dealt with. The parcels collection and delivery service covering addresses in the Guyhirne district will continue to operate as before.



## German Federal Railway Mixed Traffic Bo-Bo Locomotives

*One of five prototypes built to compare transmission systems and varieties of electrical design in service conditions*



*Prototype Bo-Bo mixed traffic locomotive for the 16 $\frac{2}{3}$ -cycle single-phase system of the German Federal Railway, with A.E.G. electrical equipment and Krauss-Maffei mechanical parts*

**I**N drawing up the specification for a new series of Bo-Bo mixed traffic locomotives, the German Federal Railway decided to make comparative trials of various transmission systems, methods of control, and details of electrical design. Five prototypes were ordered, as reported in our October 3, 1952, issue. The locomotive illustrated, of which a brief account appeared in our February 20 issue, is one of these five prototypes. Its mechanical parts were built by Krauss-Maffei, Munich, and the complete electrical equipment was designed and manufactured by A.E.G. In addition to equipping this

locomotive throughout, A.E.G. supplied the electrical installation, except for the main transformers, for two other prototypes (Nos. 10004 and 10005) which have been built by Henschel & Sohn, G.m.b.H., Cassel.

### Service Requirements

The service requirements of the prototype locomotives were as follow:—

|                     | Weight     | Gradient | Speed       |
|---------------------|------------|----------|-------------|
| Freight train ...   | 1,280 tons | 1 in 200 | 43.5 m.p.h. |
| " " ...             | 886 tons   | 1 in 100 | 37.3 m.p.h. |
| " " ...             | 492 tons   | 1 in 40  | 31.0 m.p.h. |
| Passenger train ... | 690 tons   | 1 in 100 | 56.0 m.p.h. |
| " " ...             | 394 tons   | 1 in 40  | 43.5 m.p.h. |

To meet these conditions the Krauss-

Maffei/A.E.G. locomotive has been designed to have the characteristics shown below:—

|                           |                           |
|---------------------------|---------------------------|
| 1-hr. rating ...          | 5,092 h.p. at 58.5 m.p.h. |
| Continuous rating ...     | 4,824 h.p. at 59 m.p.h.   |
| T.E. at wheel rims ...    | 58,240 lb.                |
| Maximum service speed ... | 78 m.p.h.                 |

### Mechanical Design

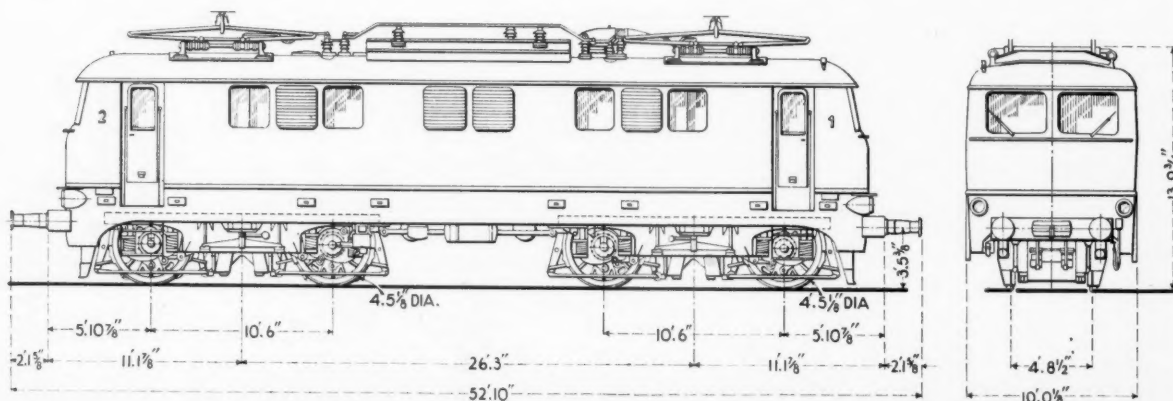
The locomotive frame and body form an integral all-welded structure, carried on two two-axle motor bogies. An Alsthom type of pendulum bogie suspension permits some lateral movement of the body under the control of return springs. Two side-bearers on each bogie, supported by laminated springs, also are pendulum suspended to allow this sideways motion. Rubber discs on the pendulum links contribute to damping vertical oscillations, and the metal bearer plates partly damp the rotational movements of the bogie. A spring-controlled transverse coupling links the two bogies to provide further control of oscillation. The axleboxes are supported by guides mounted on Silentbloc bushes and have coil-spring suspension associated with rubber discs.

Hildebrand-Knorr two-step braking with controlled pressure is fitted, each wheel being braked individually with its own cylinder. A hand brake acts on the outer axle of each bogie.

### Electrical Equipment

The electrical equipment is designed for operation on a 15,000 V., 16 $\frac{2}{3}$  cycles, single-phase a.c. supply. Current is collected by either of two pantographs, and fed to the main transformer through an air-blast circuit-breaker, with electrical remote control, and provision for hand operation when first raising the pantograph. Pressure-controlled relays prevent the circuit-breaker from being closed if the normal working air-pressure is not available.

The H.T. and L.T. windings of the



*Dimensions of locomotive*

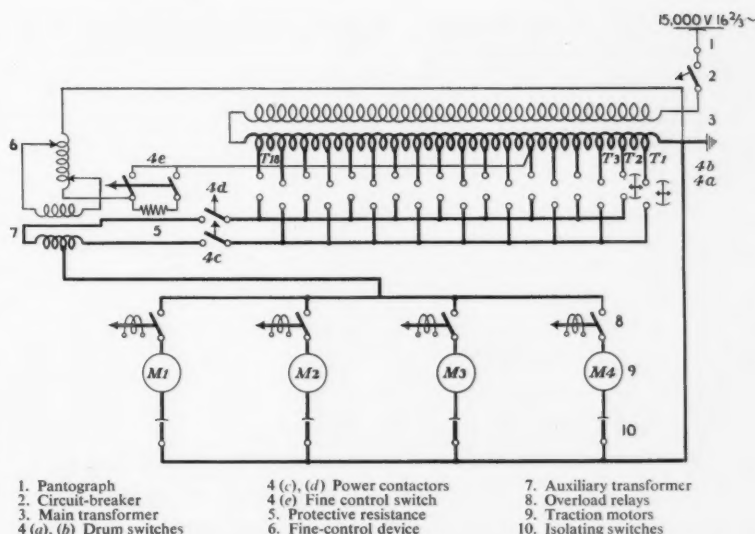
main transformer are connected as an auto-transformer. Eighteen L.T. tapings provide a range of from 65 to 616 V. for traction motor control. Heating supplies are taken from tapings at 1,000 V. and 800 V., and from the highest traction motor tapping. The transformer is oil-cooled, the oil being passed through a radiator system fitted to the sides of the tank. It is rated at 2,750 kVA. and weighs approximately 9½ tons.

An oil pump driven by a split-phase induction motor with a rating of 4 h.p. at 900 r.p.m. delivers 198 gal. per min. A series commutator motor (11 h.p. at 1,600 r.p.m.) drives the two transformer blowers, each with an output of 5,300 cu. ft. per min.

The four traction motors are connected in parallel. Each is a 14-pole series machine with ratings at 90 per cent of the transformer no-load voltage of 1,273 h.p. (1-hr.) and 1,206 h.p. (continuous). Being bogie-mounted and therefore fully springborne, the motors drive through resilient gearwheels to quill shafts which are coupled to the driving wheels by an Alsthom type of flexible lever system with its elements mounted on Silentblocs. The same type of motor is used in prototype locomotives Nos. 10004 and 10005, with Sécheron spring drive, and the machine has been dimensioned to suit this application as well, which requires a narrower frame and lower speed than could have been used with the Alsthom transmission. Each motor weighs 4 tons. Special provision is made for cooling the commutator.

#### Control System

Connections to the transformer tapings are made by rotating contact drums driven by an a.c. commutator motor. The drum contacts connect the tapings with a pair of busbars in circuit with a reactance coil, the mid-point of which is connected to the traction motors. The fine-control device consists of a winding across a section of the main transformer from which a variable voltage can be applied to the



*Locomotive power circuits and fine control device for providing intermediate notches between the main tapings*

primary of the auxiliary transformer (the secondary of which forms the reactance coil). In this way 18 voltage steps intermediate with those derived from the main tapings are provided. All these steps are used during acceleration, but those between notches 0 and 1, and between 13 and 18 (six in all), are passed through automatically and cannot be selected as running notches from the driver's controller. Contactors open alternately to break the current while each drum switch is rotating.

When the driver's controller is moved to any notch, the equipment notches up automatically to the corresponding setting. The driving motor is connected between the power transformer and a regulating transformer with corresponding tapings, and is arranged so that alteration of the setting of the latter, by means of the driver's handle, establishes a voltage difference and permits current to flow. The motor therefore runs until balance is restored, which

occurs when the settings of the regulating and main transformer drum switches again correspond.

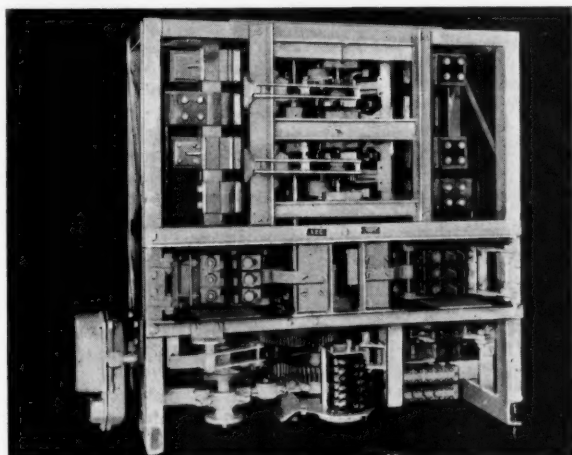
As the selected notch is approached, the voltage falls below the level necessary for operation of the motor, and the final movement of the main transformer drum switch is therefore effected by the automatic switching-in of an auxiliary squirrel-cage induction motor, which is stopped at the required notch by a limit switch.

The control equipment and its drive are mounted on a bracket attached to the main transformer and form a single unit weighing 12 cwt.

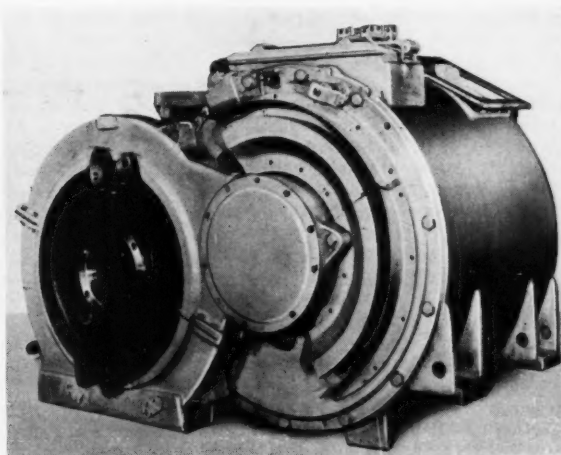
#### Auxiliary Services

The normal auxiliary supply is 200 V., but the transformer blowers (mentioned above) and traction motor blowers are started on 100 V. with a resistance in series, which is switched out by a time relay. This process is repeated on

(Continued on page 353)



*Control unit detached from transformer*



*Traction motor and quill shaft drive*

## London Midland Region Land Cruises

*Special trains operated over a 150-mile inland and coast route*

**F**OR three summer seasons the Chester District of the London Midland Region has been successfully operating train cruises enabling visitors staying at the coast resorts served by the Chester-Holyhead line to view the inland scenery of North Wales and Cambrian Coast by special train.

When five-day runabout tickets were re-introduced in North Wales in 1949 it became evident that, although extensively advertised, they were not making the same appeal as before the war. Mr. F. H. Fisher, District Traffic Superintendent, Chester, concluded

coach was named after one of six castles within sight of which the tour passed. The fare quoted for the round trip of 152 miles was 12s. 6d., competitive with that of road tours over a somewhat similar route.

It was thought at first that the cruise might be sold to holidaymakers in the many camps and boarding houses in the Rhyl area; the intention was that parties should be formed from the camps and saloons allocated for their exclusive use on whichever day they wished to travel. Camp proprietors and other potential party organisers

summer inspector canvassed strongly throughout the area.

During the first year of operation, when it was known as the Festival Land Cruise, the cruise ran on 49 occasions, from July 3 to September 20. The total number of passengers conveyed was 6,922. The train was made up to six vehicles, consisting of the five special saloons referred to and one brake third open, drawn by a class "2" 2-6-0 engine.

### Catering Arrangements

The stop at Barmouth was long enough to allow passengers to have lunch, and it was arranged with a local hotel to provide the requested number of lunches on receipt of a wire each day; in addition, the refreshment rooms at Corwen and Afonwen provided tea and other refreshments. As the need for buffet facilities nevertheless became evident, the Hotels Executive Area Manager was approached and one of the kitchen pantries in the club saloons was opened up and staffed from the Rhyl refreshment rooms for the service of coffee, tea, ice cream, cakes and other refreshments.

The cruise was repeated in July, August and September, 1952, on Mondays to Fridays inclusive, and a cruise was also put on from Llandudno covering the same route. The Llandudno cruise ran on Tuesdays, Wednesdays and Thursdays, July 8-10, July 15-17, and September 16-18 and on Mondays to Fridays inclusive from July 21 to September 12.

The cruise from Rhyl had established itself in popularity but it was felt that special efforts would be needed to make that from Llandudno successful. The train was placed on view at Llandudno on the Sunday before its inaugural journey. A special letter was sent to the main hotels and boarding houses by the District Traffic Superintendent, setting out the reason for the cruise and enlisting support, intensive house-to-house distribution of literature was made, and posters were widely exhibited throughout the Llandudno and Colwyn Bay district. By inviting 20 passengers on each trip to say through what advertising media they came to travel on the cruises, it was possible to summarise results from different forms of advertising.

For the 1953 summer season which has just concluded it was decided to introduce a cafeteria car, with bar, on each train. This service proved most popular as it meant that passengers could consume refreshments in the car or take them to their seats elsewhere in the train. Both trains carried a conductor, a railway superannuitant with a knowledge of Welsh and the country traversed, who passed through the train at intervals to draw attention to places of historic or scenic interest.



*One of the cruise trains approaching Barmouth*

that the only way to recapture some of the tourist traffic, which was being largely abstracted by motorcoach operators, was to offer a new type of tourist service at an attractive price.

### Inception of Scheme

In 1950 schemes to run push-and-pull trains over some of the less frequented branches were drawn up but, fortuitously, some armchair club saloons and other vehicles which had been taken out of service in 1939 became available. As an experiment a land cruise train composed of such stock was started in the summer of 1951 from Rhyl through the Vale of Clwyd via Denbigh and Ruthin, thence through the Vale of Edeyrnion via Bala Lake and Dolgelley to Barmouth where time was allowed for sightseeing, and returning via Harlech, Portmadoc, Caernarvon and Bangor. To give individuality to the train and make the vehicles readily identifiable by passengers leaving the train at stations *en route*, each

were invited to inspect the train at Rhyl Station before its inaugural run. It was difficult to decide how far to advertise the train as, if sufficient parties to fill the majority of the saloon accommodation could be secured, it would not be necessary to spend much on publicity. On the other hand, if parties were not forthcoming a vigorous advertising campaign would be needed to justify the train. Finally, handbills were issued giving details of the facilities available from Rhyl, Llandudno, Colwyn Bay and Prestatyn, and a few hand-designed posters were issued, mainly to the holiday camps. The train was on show at Rhyl for two Sundays and viewed by many people.

Other preliminary work included preparing and printing a four-page folder describing the country through which the cruise passed. One was handed to each passenger at the start of the journey. The mobile enquiry bureau and promenade kiosks were used to publicise the cruise and the



This season each cruise was named the Coronation Land Cruise: the Rhyl cruise ran on 58 occasions, from June 29 to September 18, conveying 8,439 passengers, and that from Llandudno was extended for another week until September 25. The Rhyl cruise left at 9.55 a.m. and returned at 5.30 p.m.; that from Llandudno left at 9.55 a.m. and returned at 6.18 p.m. Passengers from and to other North Wales coast resorts changed either at Rhyl or Llandudno Junction.

#### Cruise from Chester

In view of the success of the Rhyl and Llandudno cruises, another train cruise was offered this season from Chester to Rhyl, Corwen, and Llangollen and back to Chester, giving 93 miles of travel for a fare of 8s. It ran each Wednesday in July and September and from Mondays to Fridays throughout August. As sufficient time was allowed at Rhyl for lunch and at Llangollen for tea, full refreshments were not provided, but one of the kitchen pantries in the coaches was used for the sale of ice cream, minerals and biscuits.

Longer established excursions based on Rhyl or Llandudno which continued



*Passengers viewing the scenery from movable armchairs in saloon coach*

to run this season were the daily excursion to Llanberis, for Snowdon, and to Betws-y-Coed and Blaenau Festiniog;

the observation cars attached to these trains are a facility inaugurated by the L.N.W.R.

## Developments in Czechoslovakia

### *Further electrification in progress*

**T**HE reorientation of foreign trade since 1948 towards the Soviet bloc which takes some 70 per cent of the country's total exports has necessitated a considerable expansion of the railways in the eastern districts of Czechoslovakia to cope with the much increased volume of goods transported. The main artery is the former Kaschau-Oderberg Railway which links the Moravska Ostrava area, a centre of heavy industry and coal mining, with the frontier station of Cop in Eastern Slovakia which has become the main break-of-gauge station between the standard gauge of Czechoslovakia and the wider Soviet gauge.

To accelerate traffic on this important line, the 165 km. Zilina-Vrutky-Spiscka Nova Ves section has been electrified. Considerable economy in fuel and manpower is expected; in view of the gradients on this line, some 200,000 tons of coal, the declining output of which is one of the major difficulties of the Czech authorities, will be saved. Instead of 300 steam locomotives, 100 electric locomotives handle traffic that has been increased by one-third. Electrification of two sections of the main west-east line, linking Prague with Cop, is nearing completion and goods stations on this line are being enlarged.

#### New Moravian Main Line

According to a recent report from Moscow, the secondary standard-gauge line connecting Brno, the capital of

Moravia, with Havlickuv Brod (on the Prague-Kolin-Jihlava-Znojmo main line) is being converted into first-class main line to relieve the Brno-Pardubice-Kolin-Prague main line, one of the busiest in Czechoslovakia. The Brno-Havlickuv Brod line, 76 miles long, was not built for fast traffic, and stopping services only have been worked over it.

The main line between Brno and Prague via Pardubice and Kolin is 158 miles long; the distance by the new route will be 157 miles. Relief services between Brno and Prague avoiding the busy main line at present use the route from Brno westward which connects at Okrisky (46½ miles from Brno) with the Znojmo-Jihlava-Kolin-Prague main line, but the distance between Brno and Prague via this route is 172 miles.

**TOURIST INDUSTRY IN BRITAIN: HOPES FOR 1954.**—A prediction that the British tourist industry might be as successful during 1954 as it was estimated it would be by the end of this year, with some 800,000 visitors and £125,000,000 receipts, was made last week by Sir Alexander H. Maxwell, Chairman of the British Travel & Holidays Association, at its annual meeting in London. The number of overseas visitors, he said, might even show an increase, such was the interest in British traditions and pageantry stimulated by the Coronation. Sir Alexander Maxwell said that this season there had been a general improvement in the country's amenities, yet he doubted whether a prospective

visitor would get this impression after reading some of the statements in the Press, or from listening to some British people when they were abroad. There had been criticisms of hotels, but it was grossly unfair to condemn an entire industry because of a few which did not set a high standard.

### German Federal Railway Mixed Traffic Bo-Bo Locomotives

*(Concluded from page 351)*

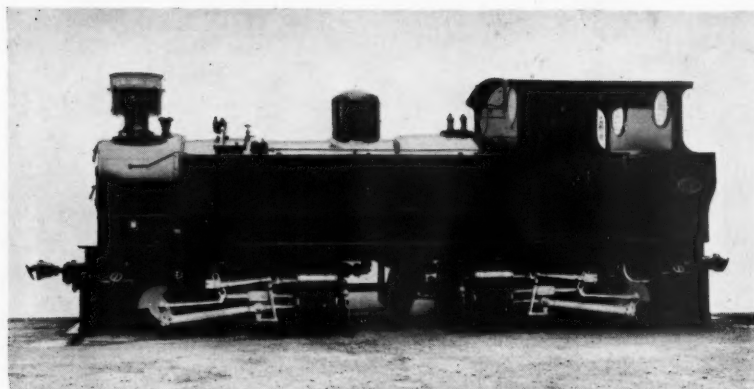
changing over to 200 V. In winter, however, the blowers are operated on 100 V. as the air supply required is less. The traction blower motors are rated at 26 h.p., and each of the four blowers delivers 5,300 cu. ft. of air per min. A commutator motor of 15.5 h.p. drives the air-compressor for braking and other supplies.

Direct current for lighting and for the operation of certain instruments is taken from a 24 V., 52 amp-hr., battery, which is charged from an auxiliary transformer through a selenium rectifier.

A distance-controlled safety device is fitted to the locomotive, consisting of a relay which must be continuously energised to prevent automatic application of the brake. Three switches and a foot pedal in the driving cab can be operated to energise the relay, and they must be actuated at intervals or the supply will be interrupted by a time control. If this action is not taken, a signal is sounded after a pre-selected distance (such as 160 yd.), and after covering a further 160 yd. the control current is interrupted, and the brakes applied.

## Narrow-Gauge Articulated Locomotives

*Designed for negotiating curves of 80-ft. radius on industrial systems*



*Bagnall 0-4-0 × 0-4-0 locomotive for 2 ft. 6 in. and 2 ft. gauge*

A BATCH of three articulated side tank locomotives has just been completed at the Stafford Works of W. G. Bagnall, Limited. Two of the locomotives have been built to the order of Sir J. L. Hulett & Sons for use on the 2 ft. gauge railway of their sugar estates in Natal. The third locomotive has been ordered by Bowater Lloyd Pulp & Paper Mills Limited, for use on its 2 ft. 6 in. gauge railway system in Kent. The latter system serves the Sittingbourne and Kemsley mills and links them with Ridham Dock on the River Swale, where logs, pulp, and coal are unshipped.

Apart from the difference in gauge

the three locomotives are practically identical. The decision to use articulated locomotives was based on the severe curves which have to be negotiated and the limiting axle load.

### Design Particulars

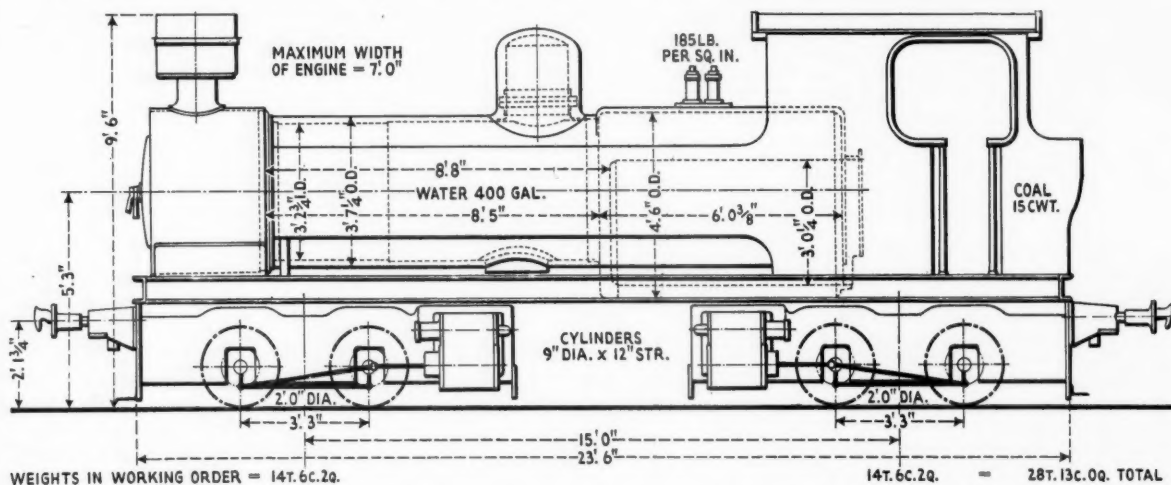
The main frames of the locomotives are composed of rolled steel channels, suitably stayed, and these frames carry the boiler, cab, tanks and bunker. The boilers are superheated and are fitted with cylindrical steel fireboxes. Boilers of this type are frequently supplied for plantation and similar service; they require no water-space stays and are consequently cheap and easy to maintain.

The main frame is carried on two 0-4-0 bogies each having two 9 in. by 12 in. cylinders. Live steam is taken to the cylinders and exhaust steam from the cylinders to the blast pipe by means of steel pipes having Flextel joints. The flexibility is such that the locomotive can easily negotiate curves of 80-ft. radius.

The valve gear is of the Walschaerts type and a special linkage is necessary to allow of its simultaneous operation on both bogies by one reversing lever when the bogies are lying at an angle to the centre line of the locomotive.

The cylinder cocks and the valves of the gravity sanding are steam operated from valves on the footplate. Provision is made for hand operation of the cylinder cocks on the bogies when the locomotive is out of steam. The working pressure is 185 lb. per sq. in. and the tractive effort at 85 per cent boiler pressure is 12,737 lb. Other leading particulars are:—

|  |              |
|--|--------------|
| Diameter of wheels ...                     | 2 ft.        |
| Rigid wheelbase ...                        | 3 ft. 3 in.  |
| Total wheelbase ...                        | 18 ft. 3 in. |
| Height ...                                 | 9 ft. 6 in.  |
| Maximum width ...                          | 7 ft.        |
| Length over buffer beams ...               | 23 ft. 6 in. |
| Total heating surface ...                  | 441 sq. ft.  |
| Grate area ...                             | 12 sq. ft.   |
| Bunker capacity ...                        | 40 cu. ft.   |
| Tank capacity ...                          | 500 gal.     |
| Weight empty (2 ft. gauge) ...             | 20 tons      |
| " in working order (2 ft. gauge) ...       | 24 tons      |
| Weight empty (2 ft. 6 in. gauge) ...       | 23·2 tons    |
| " in working order (2 ft. 6 in. gauge) ... | 28·65 tons   |



*Principal weights and dimensions of locomotive*

**MARDRIVE CLUTCH MOTORS.**—The Marine Engineering Co. (Stockport) Ltd. has evolved an intermittent-operating clutch motor known as the Mardrive D.I. type, which, it is stated, can be stopped rapidly or started at a greater rate and more frequently than can be achieved by direct

switching of a plain motor. The essential features of the equipment are a continuous running rotor and flywheel assembly with which is engaged the combined clutch and pulley member of the vee belt type. Engagement of the clutch is effected by the actuation of a clutch lever, which, when

released, permits an internal spring to engage an internal thrust race, and in turn engages the clutch plate fitted with brake linings. The application of the equipment includes conveyor drives which can, if required, be stopped or started 50-60 times a minute.

## RAILWAY NEWS SECTION

### PERSONAL

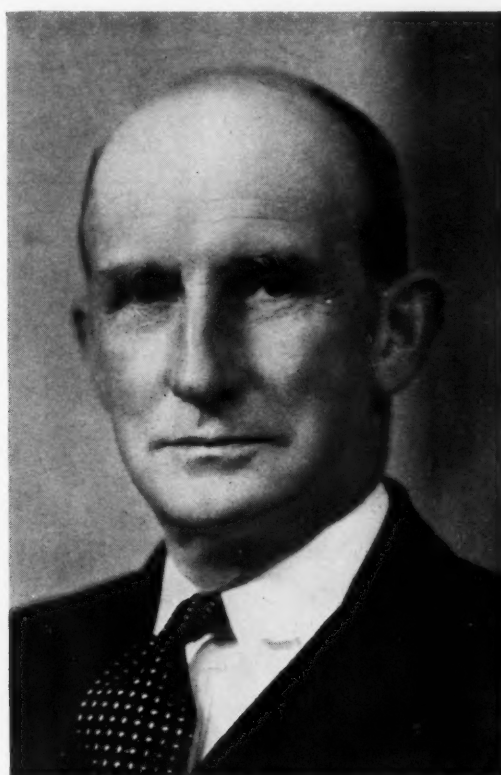
Mr. John Elliot, M.Inst.T., Chairman of the Railway Executive, who has been appointed Chairman of the London Transport Executive, was born in 1898, and was educated at Marlborough and the Royal Military College, Sandhurst. He served in the 3rd Hussars in the 1914-18 war, and resigned his commission in 1920 to take up journalism. He joined the Southern

Railway Convalescent Homes. Great Britain holds the Senior Vice-Presidency of the International Union of Railways, and Mr. Elliot was nominated in 1951 to this position. In the same year he visited the United States, where he met the executive heads of several of the largest American railways and inspected the British Railways organisation in the U.S.A. for development of tourist traffic to Great Britain. He was nominated an Officer of the

Mr. Train was appointed Personal Assistant to the Chief Engineer, G.N.R., in 1921. In this capacity he was responsible for introducing the Hallade track recorder and Hallade method of adjusting curves to this country. Three years later, Mr. Train was appointed Assistant Industrial Agent in the Chief General Manager's Office, and was placed in charge of the Works Section of that office in 1925. In 1927, he was appointed Assistant to the



*Mr. John Elliot*  
Appointed Chairman,  
London Transport Executive



*Mr. J. C. L. Train*  
Appointed Member,  
British Transport Commission

Railway in 1925, and became Development Officer in 1930, Assistant Traffic Manager in 1933, Assistant General Manager in 1937, Deputy General Manager in 1939 and Acting General Manager in 1947. On the nationalisation of the railways on January 1, 1948, Mr. Elliot became Chief Regional Officer of the Southern Region. In March, 1949, he visited Australia at the invitation of the Victorian Government to report generally on the Victorian Government Railways, and, in 1950, he was appointed Chief Regional Officer, London Midland Region, in which year he gave evidence on behalf of the Ulster Transport Authority concerning the closure of the Belfast & County Down Railway. He was closely associated with the organisation of the railway-operated air services, and has been a Director of various railway-associated road transport companies. In 1951, Mr. Elliot was appointed to the Chairmanship of the Railway Executive. In the same year he accepted the office of President of the

Legion of Honour in 1953 in recognition of the part he has played in the development of international services between France and Great Britain, and in the promotion of co-operation between their two railway systems. Mr. Elliot holds the U.S.A. Medal of Freedom with bronze palm for special services to the Transportation Corps, U.S. Army.

Mr. J. C. L. Train, C.B.E., M.C., M.I.C.E., Member, Railway Executive, who has been appointed a full-time Member of the British Transport Commission, has been a Member of Council of the Institution of Civil Engineers, and Past President of the Permanent Way Institution. He joined the North British Railway, Edinburgh, as an apprentice in 1908, and became Junior Engineering Assistant, G.N.R., in 1912. He enlisted in the Infantry in August, 1914, was awarded the M.C. in 1918 while in command of the R.E. Field Company, and was demobilised in June, 1919, with the rank of Major.

Chief General Manager (Works), and two years later he was transferred to Glasgow as District Engineer (Western Section), Southern Scottish Area. In 1934, he was appointed Assistant Engineer (Maintenance), Southern Area, and became Assistant Engineer of that area in 1937. He was appointed Engineer, Scottish Area, in October, 1938, and, in 1941, Engineer, Southern Area. He was promoted to be Chief Engineer in 1942. He served on the Railway (London Plan) Committee between 1946-47 and was appointed a full-time member of the Railway Executive in 1947. He was awarded the C.B.E. in the Queen's Birthday Honours List of 1952.

Mr. F. H. Mann, Deputy Senior Electrical Inspector of Factories, has been appointed Senior Electrical Inspector of Factories & Electrical Adviser to the Home Office as from October 1. He will succeed Mr. H. W. Swann, who is retiring from the position at the end of this month.



Sir Reginald H. Wilson, Comptroller, British Transport Commission, who has been appointed a full-time Member of the British Transport Commission, is a Scottish chartered accountant. After qualifying in 1927, he was associated with Messrs. Brown, Fleming & Murray, Chartered Accountants, and subsequently went abroad in the service of Whinney, Murray & Company, of which he became a partner in 1937. Afterwards he was made a partner in Brown, Fleming & Murray. At the outbreak of war, he was assigned to special duties in Poland, but by the end

member of the Royal Commission on the Press. Sir Reginald Wilson was appointed Comptroller of the British Transport Commission on its inception in 1947. He received his Knighthood in the 1951 New Year Honours List.

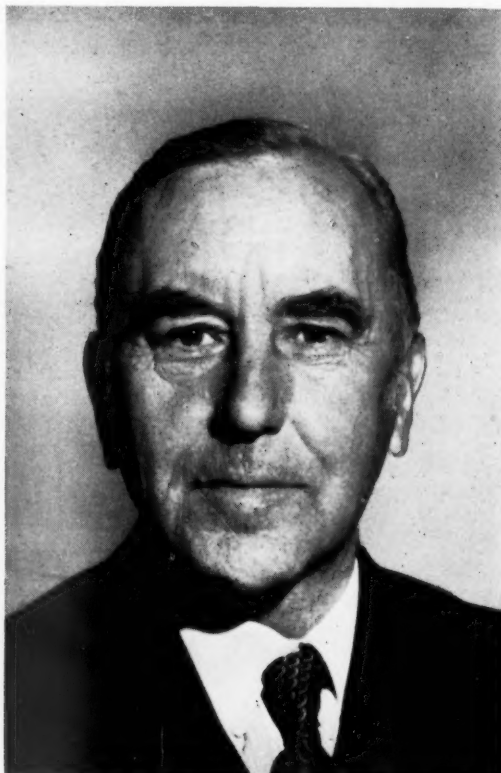
Sir Harry Methven, Chairman of the Hotels Executive, who has been appointed a part-time member of the British Transport Commission, was born in 1885 and educated privately in Scotland. At the age of 19 he went to the United States, where for two years he underwent inten-

ted Chairman of the Hotels Executive in 1951. Sir Harry Methven is a member of the Council of Eastbourne College and the Metropolitan Gardens Association. He received the honour of Knight Bachelor in the King's Birthday Honours List of 1944, and that of K.B.E. in 1952.

Mr. J. Waller, Goods Agent, Kings Cross, Eastern Region, British Railways, has been appointed Assistant District Goods Superintendent (London Suburban), Gordon Hill, in succession to Mr. G. P. Huskisson.



*Sir Reginald H. Wilson*  
Appointed a full-time Member,  
British Transport Commission



*Sir Harry Methven, K.B.E.*  
Appointed a part-time Member,  
British Transport Commission

of 1939 was back in England. Shortly afterwards, he joined H.M. Treasury. Early in 1941 he transferred to the Ministry of Shipping as Director of Finance, with the rank of Principal Assistant Secretary, for the purpose of reorganising and controlling its financial work. When the Ministry of Shipping was merged with the Ministry of Transport, Sir Reginald Wilson continued in the same capacity, becoming chief of the combined financial administration. Among his responsibilities were the financial arrangements for the control of railways and canals. In 1945 he was appointed an Under-Secretary of the Ministry of Transport. After the war he returned to Brown, Fleming & Murray, but continued to interest himself in various forms of public service. Jointly with Sir Alan Rae Smith he was financial adviser to the Ministry of Transport. He was also made adviser on special matters to the Control Commission for Germany early in 1947, and, until he joined the British Transport Commission, he was a

sive training with a large firm engaged in the food industry. After gaining further experience in England he joined Rowntree & Co. Ltd., and in due course became a Director of that firm, a position he held until 1950. Sir Harry Methven is Chairman of Fuller's Limited, and among other positions he holds are those of Chairman of W. S. Shuttleworth & Co. Ltd. and Whitefields Limited, and Director of Dorchester Hotel Limited. In 1941 the Minister of Labour & National Service decided to form an undertaking for housing and feeding those transferred war workers who came under the Works Engagement Order and, when National Service Hostels Corporation Limited came into being, Sir Harry Methven was invited to become one of the original Directors: since the resignation of the late Lord Rushcliffe in 1946 he has been Chairman of the Corporation. In 1948 he accepted an invitation by the Minister of Transport to become a member of the Hotels Executive on a part-time basis. He was appoint-

Mr. G. L. Bryson, O.B.E., Passenger Traffic Manager of the United States lines of the Canadian National Railways is retiring on September 30.

Mr. S. J. R. Allwood, A.M.I.E.E., Principal Assistant (Electrical) to the Mechanical & Electrical Engineer, London Midland Region, British Railways, is retiring on October 2, after over 50 years' service.

Mr. W. W. Shutt, Relieving System Manager, South African Railways, Johannesburg, has been appointed Chief Stores Superintendent, South African Railways, Johannesburg, in succession to Mr. D. F. Toerien, who has been appointed Director of the Union of South Africa Government Supply Office in America. Mr. Toerien succeeds Mr. J. Timperley, who has retired.

Mr. Nizamettin Osman Ozbek, Director of Training for the Turkish State Railways, arrived in the United Kingdom on

September 10 on a month's bursary awarded to him by the British Council to study personnel training with British Railways. From 1948-50 Mr. Ozbek was Commandant of the Railway Operating Company and from 1950-51 he was a translator in the American Military Aid Group to Turkey and visited the United States on a course for transportation officers. From 1951-52 he taught Movement Control in the Army Transportation School in Turkey before becoming Head of the Traffic Section in the Roads Department.

The following administrative changes will take place on the Swiss Federal Railways:—

Mr. Henry Huber, Chief of Traction & Workshops, is retiring. He will be succeeded by Mr. Franz Gerber, Chief of the Traction & Workshop Department, Berne Löttschberg-Simplon Railway.

Mr. Josef Fahm, Chief of the Legal Department, is retiring. He will be succeeded by his deputy, Mr. Hans Amberg.

Mr. Max Portmann, Deputy of the Chief Engineer, Regional Management II (Lucerne), has been appointed Head of the Construction Department.

Mr. Walter Wachs, Divisional Manager, Lucerne, is retiring. He will be succeeded by Mr. H. Merz, Chief Officer (Construction & Maintenance of Way).

Mr. J. S. Nicholl, C.B.E., Chief Officer (Research & Charges), Road Haulage Executive, will retire at the end of the year.

The Rt. Hon. R. R. Stokes, M.C., M.P., Managing Director of Ransomes & Rapier Limited, is sailing from Southampton in the *Queen Mary* on September 24 on a four weeks' business tour in Canada during which he will visit Toronto, Winnipeg and St. John, N.B.

Mr. William Bell Common, a Director of the San Paulo (Brazilian) Railway Company, has been elected Chairman of the company in succession to Lt.-Colonel C. O. H. Bury, who has resigned from the board on medical advice. He has been Chairman since 1949. Mr. Frederick William Wills has been elected a director of the company.

Mr. A. Nesbitt, District Manager in Newcastle for the Dunlop Rubber Co. Ltd., has been appointed Sales Manager at Leeds for the north of England. He succeeds Mr. George Bourne, who is retiring at the end of this month after more than 50 years' service with the company, both in the United Kingdom and in India and South America.

Mr. Kenneth Hudson has been elected Chairman of Robert Hudson Limited, and also its subsidiary, Robert Hudson and Sons (Proprietary). He succeeds the late Mr. W. S. Hudson. Mr. Robert Hudson, of Johannesburg, a Director of the subsidiary company, has also become a Director of the parent concern.

Mr. G. F. Hicks, who has been in this country for the purpose of establishing a new company under the name of the Magnus Chemical Co. Ltd., of which he is a director, having completed his assignment from the parent company in Australia, has returned by air to Melbourne. Mr. Hicks was present at the first international conference ever to be held on industrial cleaning which took place recently in Paris under the Chairmanship of Mr. W. M. Campbell, President of

Magnus Chemical Co. Inc. of the U.S.A. Manufacturing arrangements for Magnus cleaning products with efficient after-sales service are operating in the United Kingdom and overseas.

Mr. L. E. Mold has resigned his directorship of C. A. Parsons & Co. Ltd.

Mr. Cecil F. Hurst, Technical Director of Samuel Osborn & Co., has been appointed Deputy-Chairman of the company.

Mr. T. N. Addison has been appointed Company Secretary to Leyland Motors Limited and will take up his new duties at the beginning of next month.

We regret to record the death on August 26, at the age of 83, of Mr. F. A. Poor, Chairman and Founder of Poor & Company, Chicago, and Director of the P. & M. Co. (England) Ltd.

Western S.M.T. Co. Ltd. announces that Mr. J. M. Harper has been appointed Traffic Manager of the company in succession to Mr. Peter Morrison, who will assume other duties.

Mr. Frederick Grant, M.C., Q.C., has been appointed Independent Chairman of the Executive Committee of the British Iron & Steel Federation in succession to the late Sir Andrew Duncan.

Mr. James H. McGraw, Jr., has been elected a Director of the American Locomotive Company.

#### INSTITUTION OF LOCOMOTIVE ENGINEERS AWARDS—1952/53

The following awards will be presented by Mr. C. M. Cock, the retiring President, at the General Meeting of the Institution to be held on September 23, 1953:—

*The Institution's Gold Medal* to Mr. R. A. Riddles, C.B.E., for his outstanding services to the advancement of Locomotive Engineering.

*The Frederick Harvey Trevithick Award* (£30) to Mr. R. C. Bond (President, 1953/54) for his paper entitled "Organisation and Control of Locomotive Repairs on British Railways."

*The Institution of Locomotive Engineers Award* (£20) to Mr. W. C. Ikeson, M.B.E. (Member) for his paper entitled "Development of the Oil Fired Locomotive."

*The Charles S. Lake Award* (£10) to Mr. A. W. J. Dymond (Member) for his paper entitled "Operating Experiences with Two Gas Turbine Locomotives."

*The Alfred Rosling Bennett Award.* Two awards of £5 each as follows:—

(i) To Mr. A. S. Robertson (Associate Member) for his paper entitled "Limitations of Acceleration and Braking with Electric Traction."

(ii) To Dr. H. I. Andrews for his paper entitled "Stresses in Locomotive Coupling and Connecting Rods."

*The Stewart Dyer Awards.*  
(i) (£10) To Mr. N. Micklethwaite (Graduate) for his paper entitled "Distribution of Fuel on British Railways with Regard to Coal and Coke."

(ii) (£5) To Mr. R. E. Morgan (Graduate) for his paper entitled "Development of the Farnborough Indicator and its Application to the Steam Locomotive."

In addition to the above, the retiring President has awarded a President's Prize to Mr. E. L. Byrne (Graduate) for his essay on the Institution's visit to the works of the Pressed Steel Company, Cowley, on March 24, 1953.

## Rugby Engineering Society Reception

A reception and conversazione was held by the Rugby Engineering Society on the occasion of its fiftieth year on September 24 at the Rugby College of Technology & Arts. The President of the Society is Mr. A. W. Hirst, B.Sc., M.I.Mech.E. M.I.E.E. Various aspects of engineering and Rugby's association with it, from the last century up to the present day, were exhibited with many drawings, models and documents.

The section dealing with the development of steam and gas turbines and auxiliary plant was illustrated by photographs, diagrams, and models and actual examples of earlier and modern components. Reference was made to Sir Frank Whittle's proposals for gas turbines for jet propulsion of aircraft in 1936 and a complete jet engine and jet engine rotor were shown. A model of the "Auris" marine gas turbine and parts of the unit were on show, as also were a number of components from a new British land gas turbine, the first to be destined for service in an overseas power station.

The development of oil engines was another feature of the exhibition; exhibits included a 372 b.h.p. engine for industrial duty, a model diesel power station with waste heat recovery, a working model of a diesel engine, various engine components, and numerous diagrams and photographs illustrating developments in all its aspects.

Fifty years' association of Rugby with the railways was featured and exhibits included models of main-line and diesel-electric locomotives and a working example of an electro-pneumatic camshaft unit of the P.C.M. type, manufactured by the British Thomson-Houston Co. Ltd., for the latest coaches of the Toronto Underground. British Railways were showing representative items covering 50 years of main line railway development achieved in Rugby and photographs and drawings of the Rugby locomotive testing station. There is evidence that as early as 1897-98 classes in some engineering subjects were held in premises in the L.N.W.R. station in Rugby; one of the apprentices later returned to the Rugby Technical College in the 1920s and became Head of the Electrical Engineering department.

Records of the industrial growth of Rugby and the corresponding technical education development were described and the more important landmarks in the story of that development shown.

**IRON ORE RECOVERY IN CANADA: ERECTION OF NEW PLANT.**—The International Nickel Company of Canada, Limited, has announced the undertaking of production of by-product iron ore from nickel ores in the Sudbury district of Ontario, centre of its mining operations. The immediate construction of a \$16,000,000 plant in the Copper Cliff area is the first unit, the operation will ultimately yield about 1,000,000 tons of high-grade iron ore a year in addition to nickel from Sudbury ores. The new plant will provide iron ore of a higher grade than any now produced in quantity in North America, containing at least 65 per cent iron natural and less than 2 per cent silica. Initially the plant will treat 1,000 tons a day of nickel-bearing pyrrhotite removed from ore in the early stages of processing at Copper Cliff. The new process now makes possible the treatment of lower grade Sudbury ores hitherto considered uneconomical.

### Surrey Docks Substation Officially Opened

The formal opening of a new electrical substation at Surrey Docks, on the East London Line of London Transport, took place on September 22, to replace the installation destroyed by enemy action during the war. This is the first installation to be completed under the programme for modernising London Transport's system of power distribution initiated during Lord Latham's term of office.

Lord Latham, Chairman of the London Transport Executive, who presided, said in his opening speech that he was much pleased to put the substation into service because he had been very closely connected with its design from its very early stages; a building had been provided, containing 10 per cent of the steel and 60 per cent of the bricks and cement used in a substation of equal output built before the war. This had been achieved on a difficult site on the side of an embankment, the foundations of which had to be taken well down, because of the nature of the sub-soil.

The equipment, also, was a marked improvement on earlier substations, he added; it was free from large quantities of oil, wholly under cover, and divided into easily accessible and transportable units, which should make maintenance easier and cheaper. The General Electric Co. Ltd. had co-operated wholeheartedly in producing this enclosed type of air-blast transformer, he said, and this was the first time that this firm had mounted their direct current, high speed circuit breakers in the form of a withdrawable truck, which London Transport engineers were insisting on for the rapid replacement of supply should a failure occur, a matter of great importance when a substation must be accommodated in a confined space, such as a lift shaft.

Lord Latham welcomed Sir Harry Railing, Chairman of the General Electric Company, and congratulated him and his company on the way they had carried out their work.

Sir Harry Railing, in his reply, said the opening of the new substation was a milestone in the development of London Transport and the Underground system. He was proud of the work done by the G.E.C. and its relationship with London Transport over a period of many years. He hoped the new substation was the forerunner of many similar ones.

#### Enclosed Air-Cooled Transformers

The new substation, for which all the equipment was supplied by the General Electric Company, has several features of unusual interest, including totally enclosed air-cooled transformers in place of those of the straight-through air-blast type, the elimination of oil in all but the E.H.T. circuit breakers, to reduce fire risk, and the adoption of unit construction of the equipment, a form of construction which lends itself to a variety of arrangements according to the size, shape and location of the site available. The introduction of portable units, in place of the former bulky and heavy equipment, has permitted a considerable simplification in the type of building required.

All equipment is mounted in rows and is visible from the central control panel; the design, however, can be adapted to suit any site; if necessary, the units could be mounted in an L-shape or even vertically.

Surrey Docks substation is designed to be normally unattended and remotely controlled from Aldgate, but there are full facilities for local control when required.

Others present included:—

Messrs. John Cliff, Deputy Chairman; A. H. Grainger, Member; E. C. Ottaway, Chief Supplies Officer; D. McKenna, Chief Commercial & Public Relations Officer; T. Bilbow, Architect; T. S. Pick, Chief Electrical Engineer; and A. W. Manser, Chief Mechanical Engineer (Railways), London Transport Executive.

### Reopening of Railway Convalescent Home at Ilkley

The railway convalescent home at Ilkley, Ardenlea, rebuilt after a fire in 1945, was reopened on September 18 by Sir John Benstead, Deputy-Chairman of the British Transport Commission and President of the Railway Convalescent Homes, of which H.M. The Queen is Patron. The ceremony was held in a marquee in the grounds of Ardenlea, and special arrangements were made by British Railways, Eastern and North Eastern Regions, in conjunction with the Secretary of the Homes, Mr. H. Haigh, for the party of guests travelling from London.

Mr. A. L. Crewe, Chairman of the Board of Trustees and Assistant Regional Staff Officer, Eastern Region, presided at the ceremony. Welcoming the guests, he drew attention to the material and other difficulties overcome in rebuilding the home after the fire, and thanked all concerned for their help.

Councillor John Hardy, Chairman of Ilkley Urban District Council, welcomed the guests to Ilkley and expressed the gratification of the people of Ilkley at the re-establishment of the convalescent home there; he pledged the co-operation of the local authorities in making its occupants welcome in the district. He went on to testify, as a West Riding businessman, to the magnificent wartime record of the railways in handling important wool traffic.

Sir John Benstead briefly traced the history of the railway convalescent home movement and stressed the value of the principle observed, that the services rendered by the homes were paid for by those who enjoyed them, by voluntary subscriptions from 450,000 supporters among British Railways and London Transport railway employees. On behalf of the British Transport Commission he pledged the support of the management to the homes. Railway work, he added, was exacting, and it was important that those recovering from sickness and injury should be fully restored by convalescence, before returning to duty. He then formally declared Ardenlea open.

Mr. J. S. Campbell, General Secretary of the N.U.R., moved a vote of thanks to Sir John Benstead, who he said had always shown sympathy with the underdog. He praised the promptitude with which cases for admission to the homes were dealt with.

Mr. H. A. Short, Chief Regional Officer, North Eastern Region, seconded the vote of thanks, and related how on liberation of the Channel Islands in 1945, Sir John Benstead insisted on visiting them to see to the welfare of employees of the railway marine services who had stayed on duty there and became prisoners in 1940.

After Sir John Benstead had replied briefly, the Right Reverend A. O. Hardy, Assistant Bishop of Bradford, conducted a short service of dedication.

Others present included:

British Transport Commission: Mr. Frank Gilbert, Principal Staff Officer.

Railway Executive: Mr. W. P. Allen,

Member, and President Elect, Railway Convalescent Homes; General Sir Daril Watson, Member; Mr. D. F. Gowen, Executive Officer (Salaried Staff).

Eastern Region: Mr. C. K. Bird, Chief Regional Officer.

Messrs. C. H. Brazier, R. Burgoyne, C. Cooper, H. C. Lang, and R. Simpson, Regional Staff Officers respectively of the Scottish, Western, North Eastern, Southern, and London Midland Regions.

Messrs. A. Bull, Chief Staff & Welfare Officer, London Transport; F. L. Charlton, architect in charge of rebuilding of the home; H. W. Franklin, President, N.U.R.; Alderman Percy Morris, past President, T.S.S.A.; and Mr. N. A. Pinches, President, A.S.L.E.F.

### Staff & Labour Matters

At a meeting of the Railway Staff National Council on September 22 the claim of the railway trade unions for an increase of 15 per cent in present rates of pay of salaried and conciliation staff was again declined by the Railway Executive.

The unions indicated that in the circumstances they desired their claim to be referred to the Railway Staff National Tribunal for decision.

The Railway Staff National Tribunal consists of three members, one nominee each from the Railway Executive and the Unions, selected from a previously nominated panel, and a chairman, who at the present time is Sir John Forster, Q.C.

Leaders of the three railway trade unions presented their case to the London Transport Executive on September 21 in support of their claim for a 15 per cent increase in the rates of pay of London Transport railway employees. This claim is parallel to that under negotiation with the Railway Executive, and a reply will be given by London Transport at a later meeting.

**BRITISH ROAD SERVICES STAFF.**—The Road Haulage Executive states that it has taken no decisions regarding staff redundancy that might arise as a result of the implementation of the Transport Act, 1953. The National Staff Council at its meeting on September 16, gave some consideration to the problem and agreed that the Joint Standing Committee should make a special examination of the subject. As soon as there is definite information to give the staff will be informed through the proper channels. Meantime it is the duty of the Executive and its staff, as laid down by the Act, to "carry on the existing road haulage undertaking during the period of disposals without avoidable disturbance to the transport system of the country."

**QUASI-ARC METAL RECTIFIER PLANT FOR D.C. WELDING.**—The Quasi-Arc Co. Ltd. has evolved what it claimed to be a new type of metal rectifier welding set for welding non-ferrous metals and alloys, aluminium, copper, brass, nickel, stainless, and heat resisting steels, and so on. Features include complete remote control. The current selector may be withdrawn from the main plant as a complete unit; two or more sets may be coupled together, with extended current range and extended primary range. The equipment was demonstrated at the recent Engineering & Marine Exhibition at Olympia, and subsequently at the Bilston showrooms of the company. Demonstrations can also be arranged at customer's works as and when desired.



## Doncaster Works Centenary Celebrations

*Exhibition of British Railways, L.N.E.R. and G.N.R. locomotives and rolling stock opened by Mr. R. A. Riddles*

The centenary of the Doncaster locomotive, carriage and wagon works, originally built in 1853 as repair shops for the Great Northern Railway, was celebrated on September 19 and 20, when the public was admitted to the exhibition of locomotives, carriages, and wagons in the works premises. Celebrations included, besides the official opening on September 19, a special service in St. James' Church, Doncaster (the "Plant" church) on the Sunday, conducted by the vicar, the Rev. V. L. Treanor. The following Thursday was an open day, as is today (Friday) with the works open to the public, and a Works Centenary whist drive and dance are being held tonight in Doncaster Mansion House.

### Opening Ceremony

Mr. C. K. Bird, Chief Regional Officer, Eastern Region, who presided at the opening ceremony in the locomotive repair shop, instituted proceedings by ringing the Old Works Bell. He referred briefly to the 100 years of output by hand and brain since the works had been founded by the G.N.R. in 1853, and to the great locomotive engineers whose designs had been executed at Doncaster: Sturrock, Stirling, Ivatt, and Gresley. Amongst such engineers, he added, Mr. R. A. Riddles, Member of the Railway Executive for Mechanical & Electrical Engineering, could be reckoned. The standard Pacifics, the "Britannia" class, designed and built under Mr. Riddles' direction, were only the beginning of new developments in locomotive, carriage, and wagon design on British Railways.

The Rev. G. Hollis, the Works Padre, then offered prayers, and in a short address commended the use to good purposes of God-given talents and materials.

Mr. R. A. Riddles, declaring the exhibition open, expressed his satisfaction at the religious observances that day and on the Sunday which, he said, truly befitted the occasion. He stressed the benefits received by the works from the town of Doncaster and by the town from the works. The works, he added, were famous not only for locomotives but also for the rolling stock, much of it in good condition after some years of service, of past and present famous trains such as the "Flying Scotsman."

### Interchange of Men and Ideas

Now, he went on, there was exchange of men and ideas between the works of the former railway companies. This might have been preaged by the migration to Doncaster from Swindon of Archibald Sturrock.

Mr. R. Riddles thanked Mr. K. J. Cook, Mechanical & Electrical Engineer, Eastern and North Eastern Regions, and the design and other staff at Doncaster, for so loyally sharing their ideas, talents, and experience with their colleagues in the Railway Executive and other Regions of British Railways.

Councillor A. E. Cammidge, Mayor of Doncaster, proposed a vote of thanks to Mr. Riddles, and thanked the Railway Executive and officers of the Regions for the facilities for performance of civic duties they had afforded and were affording him and other railwaymen holding civic office.

Mr. C. K. Bird, speaking at the subsequent luncheon at the Mansion House,

praised the good work of the centenary celebrations Organising Committee under the chairmanship of Mr. H. Rowley, Assistant Locomotive Works Manager.

Mr. Rowley expressed the delight of the Organising Committee at the presence, besides those mentioned above of Messrs. R. C. Bond, J. F. Harrison, J. S. Jones, G. A. Musgrave, and other distinguished guests from the world of mechanical engineering and from the town of Doncaster.

Others present included:—

Messrs. G. C. Gold, L. Nicholson, L. Reeves, A. E. Robson, K. S. Robertson, C. F. Rose, A. A. Stubley and G. H. Taylor.

Locomotives on exhibition included

British Railways standard class "4" 2-6-0 and class "7" 4-6-2, G.N.R. Stirling 8-ft. single No. 1 (brought from York Museum), L.N.E.R. Gresley class "A4" 4-6-2 and Thompson class "B1" 4-6-0; also Bo + Bo electric locomotive designed by Sir Nigel Gresley in 1941 for the Manchester—Sheffield—Wath electrified lines; and a "J52" class 0-6-0 saddle tank still in service, the forerunner of the class having been designed by Patrick Stirling in 1868.

Amongst passenger and goods vehicles on view were British Railways standard designs, including specialist freight wagons, containers, and instructional vehicles; Belgian and Italian ferry wagons working through to and from British Railways; former L.N.E.R. Royal saloons and various types of cranes.

A large variety of sideshows in many cases constructed by works staff in their spare time, such as a miniature railway, was available to younger visitors to the exhibition.

## Crewe Pupils and Premiums Dinner

*Foundation stone of new training school laid*

The 50th Annual Dinner of the Past and Present Crewe Pupils and Premiums was held at the Crewe Arms Hotel, Crewe, on Monday, September 21. Mr. R. A. Riddles was in the Chair and the Guest of Honour was Lord Glyn of Farnborough. Reference to the Dinner is made in an Editorial Note on page 337.

The guests included:— Messrs. V. Binns, R. C. Bond, E. R. Brown, C. R. Campbell, B. W. C. Cooke, C. Hamilton Ellis, I. C. Forsyth, J. F. Harrison, E. Lawton, Colonel J. D. Lewis, Lord Monkswell, Messrs. W. N. L. Monney, G. Oldham, H. F. Pallant, R. E. Pennoyer, A. M. Postlethwaite, Sir William Stanier, Messrs. R. G. Thomson, J. W. Watkins, and Sir William Wood.

The following is a list of Crewe men and the dates on which they were at the Crewe Works:—

Messrs. D. H. Binyon (1912-1921), F. Blackburn (1910-1918), W. A. C. Blackwell (1916), J. N. M. Briers (1912-1924), W. B. Broadbent (1942-1945), T. B. Button (1952 to date), T. W. Brown (1906-11, 1920-38), V. R. Bowen-Cooke (1916-1920), K. Cantlie (1917-1920), W. S. Cooke (1925-1930), E. M. Copley (1950-1952).

Messrs. D. C. Davies (1945-1950), T. G. Dentith (1939-1943), G. H. Fisher (1922-1926), D. Fraser (1893-1897), A. S. Gillitt (1932-1936), J. Golding (1939-1942), H. J. Grant (1952 to date).

Messrs. S. Hancock (1920-1927), W. Handy (1907-1911), P. Hodson (1951-1953), F. J. Hookham (1908-1911), O. H. Hoare, H. G. Ivatt (1904-1907), E. Ingoldby (1909-1913), S. Johnson (1945-1949), O. E. Kinsman (1905-1911).

Messrs. F. A. Lemon (1896-1899), G. A. Lemon (1928-1932), R. C. S. Low (1934-1936), D. E. K. Mayne (1919-1923), C. R. Mayo (1895-1900), B. C. McPherson (1918-1935), J. P. Metcalfe (1936-1939), R. Metcalfe (1940-1943), F. J. Moore (1946-1949), A. Macdonald, H. Neal (1918-1924), D. W. Ostle (1912-1914), P. J. Owen (1951-1952), H. Preston (1937-1944), R. A. Riddles (1909-1913), F. B. Roberts (1934-1938), V. G. Roberts (1920), E. H. Robinson (1909-1913), Eric A. Robinson (1912-1919).

Messrs. V. Saleh (1940-1945), J. Shearman (1903-1907), J. C. Stahl (1930 to date), K. A. Scott (1943-1947), A. F. Tabraham (1909-1913), R. Tandy (1903-1907), R. E. Trevithick (1909-

1913), R. Terrell (1907-1910), R. E. I. Turner (1945-1952), J. T. Thatcher (1939-1942), A. C. Ap Thomas (1931), R. S. Wood (1930-1934).

### New Works Training School

The following day, Mr. Riddles laid the foundation stone of the new British Railways Works Training School. Mr. J. W. Watkins, Chief Regional Officer, London Midland Region, presided at the ceremony, at which those present included Messrs. George Dow, Public Relations & Publicity Officer; J. M. Harrison, Regional Architect; and J. Taylor Thompson, Civil Engineer, London Midland Region, besides many of those who attended the Pupils and Premiums Dinner the previous day.

After introductory remarks by Mr. Watkins, a description of the school was given by Mr. J. F. Harrison, Mechanical & Electrical Engineer, London Midland Region. Speeches were made by Mr. F. Bray, Under-Secretary, Ministry of Education, and by the Mayor of Crewe, Councillor H. H. Griffiths, and Alderman J. Wesley Emberton, Chairman of the Cheshire County Council.

Mr. Riddles then declared the stone laid and the proceedings were closed by Mr. Watkins.

Adjoining the locomotive works, the school will be the biggest of its kind on British Railways and will supply the locomotive and other technical departments with some 270 apprentices a year. It will comprise a large workshop, accommodation for the principal and lecturers, and administrative offices. There will be classrooms, drawing offices, and a library. Adjacent to the school will be an assembly hall which can be used as a gymnasium and cinema.

**RECORD STEEL OUTPUT IN AUGUST.**—Steel production in August averaged 291,400 tons a week, the highest August figure ever recorded; the figure for the same month last year was 279,500 tons. The output of pig iron, which was also a record for the months of August, averaged 204,400 tons a week as compared with last year's figure for August of 201,900 tons.

## Ministry of Transport Accident Report

*Plessey Road Crossing, April 4, 1953 :  
British Railways, North Eastern Region*

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport, inquired into the accident which occurred at about 7.58 p.m. on April 4, 1953, at Plessey Road Crossing, Newsham, when the 7.35 p.m. up train, Newbiggin to Manors (Newcastle), consisting of six coaches drawn by a class "V1" engine with left-hand drive, after being checked at the outer home signal for Newsham North box, ran through the gates at about 10 m.p.h., narrowly missed a motor-cycle combination, collided with a car and knocked down and seriously injured two pedestrians, who had to be detained in hospital. The signalman had failed to advise the gatekeeper of the approach of this train and had given the electrical release, enabling the gates to be opened prematurely after a down train

man noticed the down train; neither could they nor the guard recollect seeing black smoke which might have come from it.

### Evidence

The gatekeeper said he received the 5 beats bell signal for the down train, acknowledged it, and opened the gates for it, then giving the one-beat signal to advise the signalman that he had done so. After the train passed he was about to give the two-beat signal, asking for the gates to be released, when he saw by the indicator that this had already been done. He therefore started to open the gates to the road. He had looked along both lines, but could see nothing on the up as the down train had emitted much black smoke. He was very definite that he had not received the four-beat signal for the

He had not been in the gate box, except to have a talk with a gatekeeper, and had not appreciated the signal was so far from the crossing. He described all the gatekeepers as good men and experienced no difficulty in working with them.

### Conclusion and Remarks

There is no doubt the accident was caused by the signalman failing to send the bell signal for the up train and prematurely releasing the gates. He realised that the train had been checked at the outer home, but Colonel McMullen feels sure he did not appreciate it would take so long (some 30 sec.) to reach the crossing. He is 53, with 37 years' service, and has been a signalman for over 30, with a clear record. He gave his evidence in a straightforward manner.

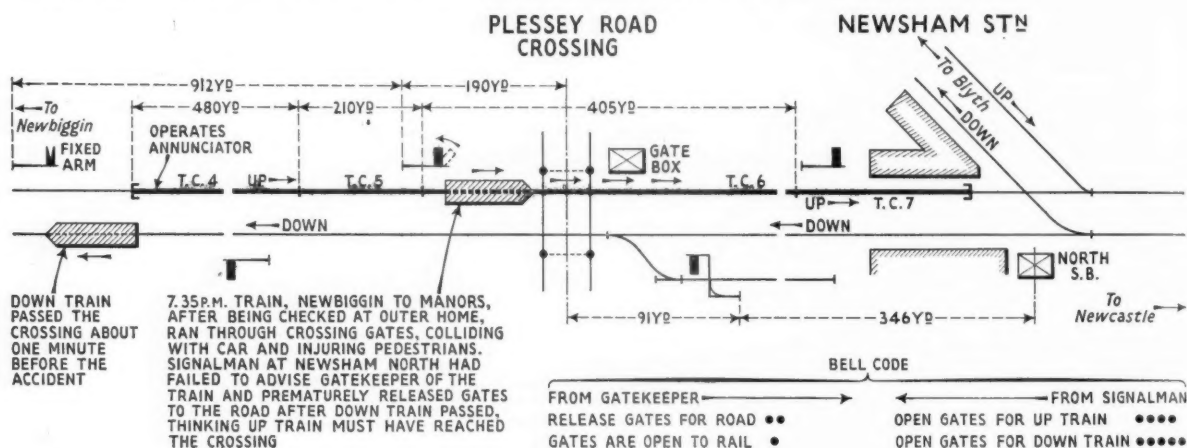


Diagram showing circumstances of accident at Plessey Road Crossing, Newsham, North Eastern Region, April 4, 1953

had passed. It was dark, with slight haze after some rain, but the rails were dry.

The crossing is in the centre of the town and very busy; train movements average 72 per day. It is worked from an elevated box, from which there is a good view of both lines for a considerable distance, with an indicator to show when the electrical release has been received and a telephone to the North box. A bell code, given on the accompanying diagram, which shows the lines, signals, track circuits, and other features essential to an understanding of the case, regulates the working.

The up train approached on a right-hand curve and there was only a few yards' view of the crossing from the left-hand side of the engine but from the other the view was good. The driver observed the outer home at danger, whistled, and braked, but when nearly stopped saw the signal come off and re-opened the regulator.

When it was about 40 yd. from the crossing the fireman shouted that the gates were coming across the line. Steam was shut off and brakes applied, but they ran through the gates and stopped with the rear of the leading coach on the crossing. The driver whistled when trying to stop. Neither he nor the fire-

man noticed the down train; neither could they nor the guard recollect seeing black smoke which might have come from it.

The signalman at Newsham North was a relief man and had worked there several times, for nearly three months in 1952, and on this occasion for 17 days before the accident. He was therefore well acquainted with its working. He said he accepted the up train when the down arrived in the platform. When the latter was ready to leave he gave the five-beat signal for it and was under the impression that he also gave the four-beat signal for the up train, but could not remember receiving an acknowledgment of that. He agreed he might not have given it.

A shunting movement was made in the station and he saw trackcircuits 4 and 5 become occupied. Realising the up train must have stopped, or nearly so, at the outer home he cleared that as soon as he could and replaced it when track circuit 6 became occupied. He gave the release to the gatekeeper, who shortly after rang up and told him of the accident. Usually he waited until asked to give the release but sometimes gave it when he saw track circuit 6 to be occupied and he had replaced the outer home.

The gatekeeper also gave his well. Colonel McMullen's only criticism of him is he doubts whether he did look along the up line as carefully as he said. Had he done that it is thought he would have seen the head lamp and lights of the train, even though the down might have been emitting black smoke. The engine crew were in no way to blame.

The crossing is equipped with ample safeguards and reliance on the human element has been reduced to a minimum; nevertheless it failed. It was suggested that track circuit 6 should be split at the crossing and the signalmen instructed not to give the release until the new one beyond it becomes occupied; also that the release lever should be controlled by track circuit. Colonel McMullen considers that neither suggestion need be carried out, where there are so many safeguards already and no previous accident has been recorded. It is undesirable to cover every possible contingency by an instruction and probably there are many other crossings of greater importance where an additional track circuit might be more justified. There are certainly other locations where new ones are far more urgently needed.

Colonel McMullen does think, however, that it would be of assistance to signal-

men for the distance between outer home and crossing to be marked on the box diagram. Such diagrams are not to scale and distances sometimes are deceptive, as in this case. The principle of marking the important distances on them might be applied generally in cases where there is room for any doubt.

It would also be advantageous if signalmen also were given, or instructed to acquire, when learning the working of a signal box, a knowledge of any gate box, ground frame, etc., under its control. This would give them a better perspective of movement in the area, and with important distances marked on the diagram, might well assist in avoiding mistakes.

## Contracts & Tenders

The Railway Executive in its 1954 programme has placed an order with the Tees-Side Bridge & Engineering Co. Ltd., for seven 55-ton armour plate wagons.

The Railway Executive has placed orders for 42-ton bogie bolster wagons with the following manufacturers: 150 with Craven Railway Carriage & Wagon Co. Ltd.; 150 with Tees-Side Bridge & Engineering Co. Ltd.; and 100 with R. Y. Pickering & Co. Ltd.

The orders placed by the Railway Executive with the Fairfield Shipbuilding & Engineering Co. Ltd., have been increased as follows: one 25-ton and three 21-ton flat trolley wagons increased to two and four respectively.

Société Générale Isothermos has received the following contracts:—

624 Athermos axleboxes, from Société Générale de Constructions Electriques et Mecaniques

180 Athermos axleboxes, from Compagnie de Fives-Lille

252 Athermos axleboxes, from Rochet-Schneider S.A.

The axleboxes are to be fitted to electric locomotives ordered from the above builders by the French National Railways for the Valenciennes-Thionville line.

The American Car & Foundry Company has received an order from the Illinois Central Railroad for one hundred 70-ton covered hopper cars. The cars will be of ACF all-welded design, and of 1,958 cu. ft. capacity. They will have round hatches which will facilitate loading and unloading and give better protection to load.

British Railways, North Eastern Region, have placed the following contracts:—

Charles R. Price, Doncaster: reconstruction of locomotive shed roof, Ardsley Motive Power Depot

James Dingwall & Son, Gateshead: erection of new signalbox, Blaydon, Cowens Crossing

British Railways, Southern Region, have placed the following contracts:—

W. H. Gaze & Sons Ltd., Kingston: improvements at Whitton Station and renovation work at Earley Station and Winnersh Halt

L. & W. Whitehead Limited, London, S.W.9: construction of new T.P. huts at Clapham, Barnett Wood, Stoneleigh, Mortlake, Chiswick, Isleworth, Feltham, Ashford, Staines Moor, Glant, Sunnymeads, Kempton Park, and Malden Manor

Demolition & Construction Co. Ltd., London, S.W.1: construction of substations at Northfleet, New Eltham, Stone Crossing, and Greenwich, and T.P. huts at Crayford, Sidcup, Lee, Woolwich Dockyard, Abbeywood, Swanscombe, and Gravesend

Jas. Longly & Co. Ltd.: new platform buildings, Twickenham Station

A. Bagnall & Sons Ltd.: renovation work at Cowden and Hever Stations

Aubrey Watson Limited, London, S.W.1: earthworks at Chislehurst, Penge, West Wickham, Grove Park, and Streatham

Maurice Hill Limited: re-roofing and

repairs, Eastleigh Carriage Works Machine Shop

Field & Cox Limited: new boiler house at Brighton Works

Edwin Danks & Co. (Oldbury) Ltd.: installation of boiler at Brighton Works

Winter & King Limited, London, S.W.20: reconstruction of loading dock, S. & T. Depot, Clapham Junction

The High Commissioner for India invites tenders for locomotive boilers. Details are given under Official Notices on page 363.

The date for the opening of tenders invited by the Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, for 6,400 axlebox groove liners has been postponed to October 6. Details of the tender were given in our September 4 issue.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

- (a) 100 buffer head and shank (steel castings)
- (b) 600 buffer fittings (plunger for buffers). Steel cl. II and III

Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16620-D/III for tender (a), by October 8, and reference SRI/16604-D/III for (b), by October 13.

The Director General of Supplies & Disposals, Railway Stores Directorate, New Delhi, is inviting tenders for:—

100,840 spring shackle pin steel class III used on wagons having 3½ in. wide springs

61,672 spring shackle pin steel class III used on I.R.C.A. wagons A/2, B/1, C/2 and C/3

99,900 pin cottered 1½ in. by 7½ in. steel class III for b.g. 16-ton axle four-wheel wagon spring shackle

3,100 spring shackle pin steel class III used with triple laminated bearing springs

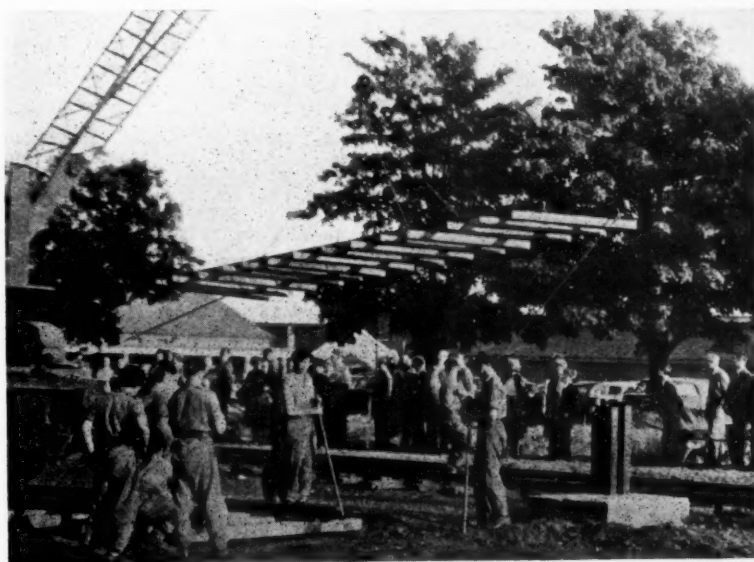
Tenders are to be submitted to the Director General of Supplies & Disposals, Shahjahan Road (Section SRI), New Delhi, quoting reference SRI/16641-D/III by October 20.

## Mechanising Track-laying in Hungary

Mechanisation of track laying is to be much extended in Hungary during the next three years. At present about ten per cent of the work is mechanised, but by 1956 it is expected that 35 per cent will be done by machine.

The present method is to pre-assemble rails and sleepers and then to lay them as a complete 36 m. formation by mobile cranes running on temporary rails beside the track. Attention is being given to a machine designed by a Soviet engineer, Platov. It consists of a crane running on the new track as it is laid. The prefabricated rail sections are in wagons behind it; the crane lifts the section from behind, drops it on to the ballast ahead, where it is fixed, and then the crane moves forward to repeat the operation. This machine lays 500 m. of track an hour.

Ballast cleaning and replacement is also being mechanised. The State Railways, which already use four Matisa tamping machines, have ordered two large-capacity ballast cleaning machines from Matisa.



Photo]

[P. M. Oliver

Platelaying demonstration with prefabricated track by men of the Royal Engineers at Longmoor Transportation Centre on the Public Day, September 5

## Public Day at Longmoor Transportation Centre, R.E.



## Notes and News

**Administrative Assistant Required.**—Applications are invited for the post of Administrative Assistant required by the Nigerian Government Railway for tour of 18 to 24 months with prospect of permanency. See Official Notices on page 363.

**Powers-Samas Accounting Machines Dividend.**—An interim ordinary dividend of 8½ per cent has been declared by Powers-Samas Accounting Machines Limited, payable on October 31; this is the same as for the previous year.

**Crewe Retains Railway Cricket Cup.**—By beating Chaddesden (Derby) in the final for the London Midland Region Cricket Cup Challenge Competition at Derby on September 19, Crewe Railway Sports Club keeps the trophy in Crewe. Last year it was won by Crewe Signal & Telecommunications Department.

**New Railway Wage Claim in U.S.A.**—The Brotherhood of Railway Trainmen has announced that it will demand a wage increase of 37½ cents (about 2s. 8d.) an hour from all railways in the U.S.A. when present contracts expire. Notice of the demand for the increase will be served on October 1.

**Swedish Lloyd Sailings London-Gothenburg: October to April.**—There will be two Swedish Lloyd sailings weekly, from Tilbury on Tuesdays and Saturdays and from Gothenburg on Wednesdays and Saturdays during the period October-December, and once weekly in both directions on Saturdays during the period January-March, except at Christmas and at the beginning and end of the winter season. The time of sailing from Tilbury Landing Stage will be 5.30 instead of 6 p.m. as during the summer season. Bus services will be provided between the London Pier and Gothenburg Central Station.

**Prizes for Station Gardens in the North Eastern Region.**—The results of the 1953 competition for best-kept station gardens in the North Eastern Region show that three stations, Bellingham, Ferriby, and Riding Mill, were bracketed equally to win

special class prizes for the highest award. Thirty stations have received first class prizes, 50 second class, 91 third class, and 15 stations were awarded certificates of commendation. Riding Mill Station now achieves the distinction of having gained a special class prize for three successive years.

**Loss of "Princess Victoria": Appeal Against Court of Inquiry Findings.**—The appeal will open on September 29 before the Ulster High Court of the British Transport Commission against the findings of the court of inquiry into the sinking on January 31 of British Railways s.s. *Princess Victoria* on her passage from Stranraer to Larne.

**British Railways, Western Region, London Lecture & Debating Society.**—On Thursday, October 15, Mr. W. B. Richards, Chief Officer, Police, Railway Executive, will deliver a paper on "History and Work of the British Transport Commission Police" before the British Railways, Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, London, W.2, at 5.45 p.m.

**Accident at Guildford Station.**—The 3.12 p.m. electric train, composed of all-steel stock, from Waterloo to Guildford on September 18 failed to stop at No. 1 bay platform, Guildford Station, and ploughed through the stationmaster's office and an inquiry office. Mr. L. C. Bassett, acting assistant stationmaster, received injuries from which he subsequently died. Mr. F. Selby, stationmaster, was seriously injured; an inspector and some passengers also were injured, but the motorman escaped injury. About 40 ft. of buildings were demolished.

**London Midland Region Education Scheme.**—Evening classes in the winter education scheme of British Railways, London Midland Region, cover such various grades as clerks, station masters, gangers, firemen, and porters, who will take courses in signalling, typewriting, stores management, shorthand, geographical and economical survey of basic materials, and other subjects. Nearly all aspects of railway work are provided for. Classes, correspon-

dence courses, and lectures which begin at the end of this month will be held at over 40 centres including Birmingham, Crewe, Derby, Liverpool, London, and Manchester. Fees will be paid by Railway Executive and textbooks provided. Examinations will be held at the end of the winter and prizes awarded to successful students.

**New Staff Amenities Building at Stoke Carriage Sidings.**—British Railways, London Midland Region, are to start work shortly on a new £11,000 brick built amenities block for the staff at Stoke-on-Trent carriage sidings. The two-storey building will provide a messroom, drying room, and washing and lavatory facilities for the staff and will also include offices, lamp rooms, a cycle store and workshops. The contractors are C. Cornes & Sons, of Hanley.

**National Safe Driving Competition: Scottish Railway Staff Awards.**—In the annual competition promoted by the Royal Society for the Prevention of Accidents over 1,100 awards have been made to British Railways motor drivers at presentation ceremonies which have taken place at various railway centres in Scotland this year. Long-term awards included 16 men with 18 years accident free driving, seven with 17 years, nine with 16 years, and twelve with 15 years. Eight drivers earned the society's ten-year medal, and 51 gained oak leaf bars recognising 10–14 years careful driving.

**Wind Blown Scottish Timber: Purchases by British Railways.**—Under arrangements agreed with the Home Timber Merchants' Association of Scotland, British Railways have contracted to purchase softwood timber in the form of sleepers, crossing timbers and wagon timbers to the value of over £1,750,000 from those areas of Scotland affected by the severe gales in February of this year, when extensive areas of growing trees were blown down. These contracts have been made with 64 timber merchants, many of whom have had no previous experience of British Railways' specifications and to assist them to produce the maximum amount of sawn timber suitable to railway requirements and so expedite the clearance of the fallen timber, special demonstrations will be given at Bo'ness Railway Sleeper Depot on September 29. The working of the small creosoting plant at Bo'ness Depot also will be shown.

**Beyer, Peacock & Co. Ltd.: New Share Issue.**—Philip Hill, Higginson & Co. Ltd. announces that underwriting has been completed for an issue by Beyer, Peacock & Co. Ltd. of 566,667 new ordinary shares, which will bring the issued ordinary capital of the company up to £1,200,000. The new issue will be for cash at 27s. 6d. a share by way of rights to ordinary shareholders registered on September 11, 1953, in the proportion of three new ordinary shares for every four ordinary shares at present held. This will absorb about 475,000 shares leaving about 91,667 "excess" shares for which ordinary shareholders may apply at the same price. The new shares will not rank for the interim dividend just declared but will rank for any further dividend for the year to December 31, 1953. Mr. Harold Wilmot, Chairman of the company, states that group trading results so far for the current year compare favourably with those of last year and order books at reasonable prices stand at record high levels. The directors consider that in the absence of unforeseen circum-



Ferriby Station, North Eastern Region, which was awarded a special class prize for the best-kept station in the Region

## OFFICIAL NOTICES

*The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive, or a woman aged 18-59 inclusive unless he or she, or the employment, is excepted from the provisions of the Notification of Vacancies Order, 1952.*

**THE High Commissioner for India invites tenders for the supply of:—LOCOMOTIVE BOILERS, METRE GAUGE, 'B' CLASS, Quantity 8. LOCOMOTIVE BOILERS, NARROW GAUGE, 'K' CLASS, Quantity 1. Forms of tender may be obtained from the Director-General, India Store Department, 32/44, Edgware Road, London, W.2, at a fee of 10s., which is not returnable. Tenders are to be delivered by 2 p.m. on Friday, November 27, 1953. Please quote reference H.No. 4426/52 in your application.**

**THE PERUVIAN CORPORATION** have the following vacancies on the railways in Peru:—Central Railway. **TRAFFIC LEARNER.** Single. Between 21 and 25 years of age. Good general education, with transportation experience either practical or theoretical. **ASSISTANT ENGINEER (CIVIL)** for Railway Drawing Office duties including Bridge and General Structural Steel Work Design, also Reinforced Concrete Structures. Must have sound technical training, preferably with previous railway experience. Age 30/35. A knowledge of the Spanish Language is preferable in both these appointments or willingness to learn within 6 months. Apply: SECRETARY, 144, Leadenhall Street, London, E.C.3.

stances they will be able to recommend the same rate of dividend and bonus for the current as for last year, namely 12 per cent. At the issue price of 27s. 6d. this would represent a yield of nearly 8½ per cent.

**Hunslet Diesel—Hydraulic Shunter.**—The Hunslet Engine Co. Ltd., is bringing into production a new standard-gauge 35-h.p. diesel-hydraulic shunting locomotive of 6½ tons weight, 2,340 lb. tractive effort, and speeds up to 7 m.p.h. It is intended for small industrial yards where loads of up to 200 tons have to be shunted.

**Special Train for Cocktail Party.**—A train is reported to have been chartered in the North Eastern Region for a cocktail party. It ran over the Morpeth-Rothbury branch, closed to passenger traffic last year on economy grounds. Composed of four buffet cars pulled by two engines, the train stopped at seven points along the line to pick up guests from the villages until there were over 100 passengers.

**British Railways Heavy Coal, Iron and Steel Traffic.**—British Railways carried 3,248,350 tons of deep-mine and opencast coal in the week ended 6 a.m. September 21, the heaviest since May. The week-end figure was 366,620 tons. During the week ended September 12, 227,398 tons of iron and steel were conveyed from the principal steel works, the heaviest carryings for three months. In the same week, 348,600 tons of iron ore were carried.

**Doncaster Works Centenary Excursion.**—Nearly 500 persons travelled from London to Doncaster last Sunday by the "Plant Centenarian," a special excursion arranged to mark the centenary of the opening of Doncaster Works, known locally as the "Plant," in 1853. The train left Kings Cross at 10.40 a.m., hauled by two former G.N.R. Atlantic locomotives designed by H. A. Ivatt. The pilot engine, No. 990, *Henry Oakley*, built in 1898, was the pioneer 4-4-2 on a British railway, and the train engine, No. 251, placed in service in 1902, was the first of the Ivatt large Atlantics. Both engines have had their G.N.R. livery restored, and have been withdrawn from service for preservation. A stop for water was made at Peterborough, and the train reached Doncaster

**ADMINISTRATIVE ASSISTANT** required by NIGERIAN GOVERNMENT RAILWAY for tour of 18/24 months with prospect of permanency. Commencing salary, etc., according to experience in scale £750 rising to £1,175 a year. Outfit allowance £60. Free passages for officer and wife and assistance towards cost of children's passages or their maintenance in this country. Liberal leave on full salary. Candidates of good education must have good railway experience including goods and passenger station work and accounts, rates and charges, operating and administrative statistics, railway and commercial law, the railway and road transport problem and legislation, modern office methods and equipment. Applicants serving with British Railways would be eligible for secondment and should forward applications through local officers. Write to the Crown Agents, 4, Millbank, London, S.W.1. State age, name in block letters, full qualifications and experience and quote M3B/28263/RA.

**JUNIOR AND SENIOR DRAUGHTSMEN** required by old-established firm about 30 miles north of London manufacturing machine element essential. For all classes of machinery. Drawing office and workshop experience required. Also technical training to at least O.N.C. standard. Please reply in writing giving full details of experience, age and salary required to Box 962, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

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3 min. early. Time allowed for a visit to the works, and the return journey began at 3.45 p.m., behind a class "A4" Pacific locomotive, No. 60014, *Silver Link*. A non-stop run was made to London, and the 29 miles from Grantham to Peterborough were covered at an average speed of 77 m.p.h., with a maximum of 95 m.p.h. near Essendine, on the descent from Stoke Summit. The train reached Kings Cross nearly 3 min. inside the 2½ hrs. allowed for the 156-mile journey.

**South Wales & Monmouthshire Railways & Docks Lecture & Debating Society.**—On Tuesday, October 13, a paper will be read by Mr. C. P. Hopkins, Chief Regional Officer, British Railways, Southern Region, before the South Wales & Monmouthshire Railways & Docks Lecture & Debating Society, on "Some Southern Region Problems." The meeting will be held in the Angel Hotel, Westgate Street, Cardiff, at 6.30 p.m.

**Turner & Newall Limited: Proposed Acquisition of Shares in Porter's Cement Industries.**—Negotiations are proceeding for the purchase by Turner & Newall Limited of a controlling interest in Porter's Cement Industries (Rhodesia) Limited, which company itself holds a controlling interest in Porter's Cement Industries (Bulawayo) Limited, both companies being situated in Southern Rhodesia and engaged in the manufacture and distribution of asbestos cement and concrete products. Formal offers will be made in the near future to the shareholders concerned for the purchase of the whole of the issued ordinary and preference capital of Porter's Cement Industries (Rhodesia) Limited and for the minority interest in Porter's Cement Industries (Bulawayo) Limited. Firm options to purchase a majority of the ordinary shares of Porter's Cement Industries (Rhodesia) Limited have already been obtained. The issued capital of Porter's Cement Industries (Rhodesia) Limited is £150,000 divided into 200,000 7 per cent cumulative preference shares of 5s. each and 400,000 ordinary shares of 5s. each. The issued capital of Porter's Cement Industries (Bulawayo) Limited is £300,000 represented by 300,000 ordinary shares of £1 each. Application will be made to the Capital Issues Committee for permission to issue ordinary shares of

**WORKS MANAGER** required for old-established Rolling Stock Works in East specialising in production of all steel railway vehicles. Commencing salary equivalent to £173 monthly. Provident Fund, free house, car, medical attention and passage for family. Applicants, who should have had experience in similar capacity, should apply in writing, to Box 955, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**RAILWAY MECHANICAL ENGINEER** required by manufacturers of specialised equipment used in all types of motive power and rolling-stock. Training of approximately two years' duration would be given with a view to employment as sales engineer. Preference given to university graduate, under 30 years of age, who has served apprenticeship with a railway. Salary during training approximately £550, depending on qualifications.—Box 940, *The Railway Gazette*, 33, Tothill Street, London, S.W.1.

**GLOSSARY OF WOOD.** A technical dictionary for all associated with timber and its uses. Ten thousand terms about timber—the common and the little known, the old and the new. Ten thousand definitions covering the entire field of timber and its uses—growth, marketing, utilisation. The commercial timbers, their qualities and uses, tools and wood-working equipment, are all here explained simply, concisely and accurately. Illustrated by many clear line drawings. Price 21s. net. By post 21s. 9d. Tothill Press Limited, 33 Tothill Street, London, S.W.1.

Turner & Newall Limited in a pre-determined ratio, in exchange for the ordinary shares of the Rhodesia Companies; the consideration for the preference shares of Porter's Cement Industries (Rhodesia) Limited will be payable in cash.

**Vickers Limited Interim Dividend.**—The directors of Vickers Limited announced that an interim dividend of 2½ per cent actual, less income tax, on the ordinary stock of the company in respect of the year 1953 will be paid on October 20.

**Shipment of Toronto Underground Stock.**—Six coaches for the Toronto underground railway now being built were shipped from Bristol in the Canadian Pacific cargo liner *Beaverburn* on September 18. They are part of an order of 104 obtained by the Gloucester Railway Carriage & Wagon Co. Ltd. from the Toronto Transport Commission.

**Pullman Breakfast Price Reduced.**—The price of "English" breakfast in Pullman cars working between London and Brighton, Eastbourne, Hastings, and Worthing, has been reduced from 5s. to 3s. 6d. The Pullman Car Co. Ltd. states that the traditional English breakfast of bacon and egg or mixed grill or occasionally fish will be maintained. The price reduction conforms with the company's policy of lowering prices to the public when possible.

**Passenger Trains Withdrawn from Birkenhead and Tong.**—British Railways announce that on and from October 5, 1953, the ordinary passenger train service will be withdrawn from Birkenhead and Tong stations, North Eastern Region, and the goods station will be converted to an unstaffed freight delivery siding. Facilities will be retained for dealing with special excursion train traffic. Adequate alternative facilities for passengers are operated in the area, there being a "bus service" about every 15 min. to Bradford, Batley and Dewsbury and every 20 min. to Morley and Wakefield. The present road collection and delivery service for parcels operating from Laisterdyke station will be continued. Facilities for not-carted parcels traffic are available at the neighbouring station of Drighlington. A freight "smalls" C & D service is now provided from Bradford and this arrangement will

not be altered. Full wagon load traffic requiring cartage and livestock traffic will be dealt with at Dudley Hill. Not-carted full wagon load traffic, including coal, will be dealt with at Birkenshaw and Tong operating as an unstaffed freight delivery siding.

**Conveyance of Soft Fruit in Chips.**—The Eastern Region has introduced a scheme for the carriage of chips of soft fruit in collapsible steel mesh crates, 26 in. long, 24 in. wide and 14 in. deep, for which no charge is made. Each crate holds 32 chips of soft fruit, and intermediate handling of the chips is entirely eliminated; the fruit is only handled on the field and upon arrival at its destination. The Fruit Growers' Association has welcomed the scheme and asked for its extension. Growers and others interested in this new facility can obtain full details of the scheme from the District Commercial Officers of British Railways, Eastern Region, at Cambridge, Ipswich, and Norwich.

**International Mechanical Engineering Congress.**—The Fifth International Mechanical Engineering Congress is being held this year in Turin, from Friday, October 9, to Thursday, October 15. At the congress papers will be read on the following subjects:—Machining with Cutting Tools; Machining with Electricity; Finishing; Progress in Foundry Practice; Precision Casting; Stamping and Forging; Extrusion, Cold Forging and Deep Drawing; Sintering; Application of Welding; Other Assembly Methods, and Comparison of Various Methods. The British Engineers' Association, 32, Victoria Street, London, S.W.1, represents the United Kingdom interests on the Organising Committee of the congress.

### Forthcoming Meetings

- September 26 (Sat.).—Permanent Way Institution, London Section. Visit to Redbridge Sleeper & Creosoting Works, British Railways, Southern Region.
- September 28 (Mon.).—Historical Model Railway Society. Illustrated talk by Mr. F. C. Hambleton: "Photos taken at random from my Collection," at the headquarters of the Stephenson Locomotive Society, 32, Russell Road, W.14, at 7 p.m.
- September 30 (Wed.).—Institute of Traffic Administration, Preston Centre, at the Victoria & Station Hotel, Preston, at 7.30 p.m. Paper on "Road Haulage," by Mr. A. Miller.
- September 30 (Wed.).—Permanent Way Institution, Newcastle Section, at the Lecture Hall of the District Engineer's Office, Forth Banks, Newcastle-upon-Tyne, at 6.30 p.m. Paper on "Bridge Reconstruction in the Middle East," by Mr. W. P. W. Davidson.
- October 1 (Thu.).—British Railways, Western Region, Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Speaker: Mr. Alan Lennox-Boyd, Minister of Transport.
- October 2 (Fri.).—The Scottish Society of Students of the Locomotive, at 302, Buchanan Street, Glasgow, C.2, at 7.15 for 7.30 p.m. Annual General Meeting.
- October 2 (Fri.).—Railway Club, 57, Fetter Lane, London, E.C.4, at 7 p.m. Paper

on "Some Railway Personalities," by Mr. G. Royde Smith.

October 2 (Fri.).—Stephenson Locomotive Society, Scottish Centre, at 25, Charlotte Square, Edinburgh, at 7.30 p.m. Paper on "The Relative Merits of Steam, Diesel and Electric Traction," by Mr. R. A. Savill.

October 3 (Sat.).—Stephenson Locomotive Society, Scottish Centre. Repeat of Mr. R. A. Savill's paper at the British Railways Offices, 302, Buchanan Street, Glasgow, at 3 p.m.

October 3 (Sat.).—Stephenson Locomotive Society, Sheffield Centre. Illustrated talk by Mr. Stewart Dewsbury on "The Lancashire, Derbyshire & East Coast Railway," at the Y.M.C.A., Fargate, at 6.30 p.m.

October 3 (Sat.).—Permanent Way Institution, East Anglia Section, at Cambridge, at 2.15 p.m. Paper by Mr. W. Barrett on "Duties of a Hallade Ganger."

October 3 (Sat.).—Electric Railway Society, at Fred Tallant Hall, 153, Drummond Street, London, N.W.1, at 3 p.m. "The Electric Railways of Merseyside," by Mr. R. K. Kirkland.

October 4 (Sun.).—The Railway Correspondence & Travel Society, East Sussex Rail Tour. Leaving Three Bridges Station at 1 p.m.

October 5 (Mon.).—Institute of Transport, at the Jarvis Hall, 66, Portland Place, London, W.1, at 5.45 p.m. Presidential Address by Mr. John Elliot.

October 5 (Mon.).—Stephenson Locomotive Society, North Western Centre. Lecture on "North Stafford Recollections," by Dr. J. R. Hollick, at the Manchester Geographical Society's Rooms, Deansgate, at 6.15 p.m.

October 5 (Mon.).—The Society of Engineers in the apartments of the Geographical Society, Burlington House, London, W.1, at 5.30 p.m. Paper on "Surface Finish and its Measurement by Electronic Methods," by Mr. S. F. Smith.

October 6 (Tues.).—Permanent Way Institution, Leeds & Bradford Section, in the British Railways Social & Recreational Club, Ellis Court, Leeds City North Station, at 7 p.m. Paper on "Pre-stressed Concrete," by Mr. H. T. Horsfield.

### Railway Stock Market

Stock markets have been much busier, particularly in the gilt-edged section where British Funds advanced to their highest levels since 1951. The immediate cause was the reduction in the Bank Rate from 4 per cent to 3½ per cent, which took the City completely by surprise. The lower Bank Rate not only means lower money rates generally, but also reduced yields on gilt-edged stocks and higher market prices for the latter. As the yield on British Funds governs the yield structure of markets generally, other fixed-interest securities, and also leading industrial ordinary shares, have reflected the general trend.

The Bank Rate cut is regarded as an indication of confidence. It will give a fillip to industry by reducing the cost of loans, and will help the export trade drive. In the City the view is current that another cut to 3 per cent may come before the end of the year, and there is also confidence that the next Budget will bring lower taxation and possibly another lowering of income tax. In the circumstances British Funds are attracting widespread attention on the scope for further good appreciation in price as time proceeds.

An additional attraction is that holders of British Funds will be able, if they wish, to exchange into steel shares at prices to be fixed when the various issues are made. Details of the first of the steel issues are believed to be imminent.

With the main interest attaching to British Funds and industrials, activity in foreign rails has fallen off, though there was again a fair amount of business passing in United of Havana stocks in anticipation of further news shortly of the Cuban Government moves to take over. The "A" stock at the time of going to press is 89, and the "B" is also changing hands around this level, while the second income stock is 37 and the consolidated stock 5½.

Antofagasta ordinary and preference have been steady at 9½ and 50 respectively. Manila Railway debentures again showed rather more business with the "A" at 81, while the preference shares were 8s. 3d. Mexican Central "A" debentures have changed hands around 85½. Nitrate Rails shares were 21s. 3d. and San Paulo units 6s. 3d.

The trend of Wall Street again affected Canadian Pacifics, which were \$41½, though the preference stock strengthened to £69½ and the 4 per cent debentures showed firmness at £87. White Pass non-par value shares were lower again at \$25 with the convertible debentures £90½.

Elsewhere, Paraguay Central 6 per cent debentures changed hands around 22½, and Guayaquil & Quito 5 per cent first debentures at 38.

Chilian Northern 5 per cent first debentures marked 28½. Costa Rica ordinary stock transferred around 11, and Brazil Rail bonds at 7.

Nyasaland Railways 3½ per cent debentures were 75. Among Indian stocks Madras "B" transferred at 26½.

There was again firmness in road transport shares with Potteries Motor Traction around 27s. 3d., West Riding 36s. 6d. xd., Southdown 31s. 6d., Lancashire Transport 51s., while demand was in evidence for B.E.T. deferred units which moved up to 30s. 9d.

Engineering and kindred shares have been rather quiet despite the upward trend in markets. This is because of a disposition to await the terms of the first of the big steel issues. Guest Keen were good, however, and improved to 52s. 1½d. Tube Investments at 62s. have moved higher, helped by news of the latest acquisition made by the group. Clarke Chapman strengthened to 64s., Babcock and Wilcox were firm at 66s. 9d. with Vickers at 50s. and Cammell Laird 5s. shares at 13s. xd. The market is awaiting news that Vickers and Cammell Laird have decided to reacquire their former big interest in the English Steel Corporation. John Brown were 35s. 10½d., and in other directions, Ruston & Hornsby moved higher at 40s.

Beyer Peacock were 30s. 6d. "ex rights" to the new shares, which were 3s. 4½d. premium over the issue price. Birmingham Carriage were 28s. 6d., Hurst Nelson 41s. xd. and North British Locomotive 12s. 9d. Vulcan Foundry have changed hands around 20s. 6d., Gloucester Wagon 10s. shares were 15s., Charles Roberts 5s. shares 16s. 6d. and Wagon Repairs 5s. shares 14s. 10½d. G. D. Peters 5s. shares were quoted at 18s. 9d.